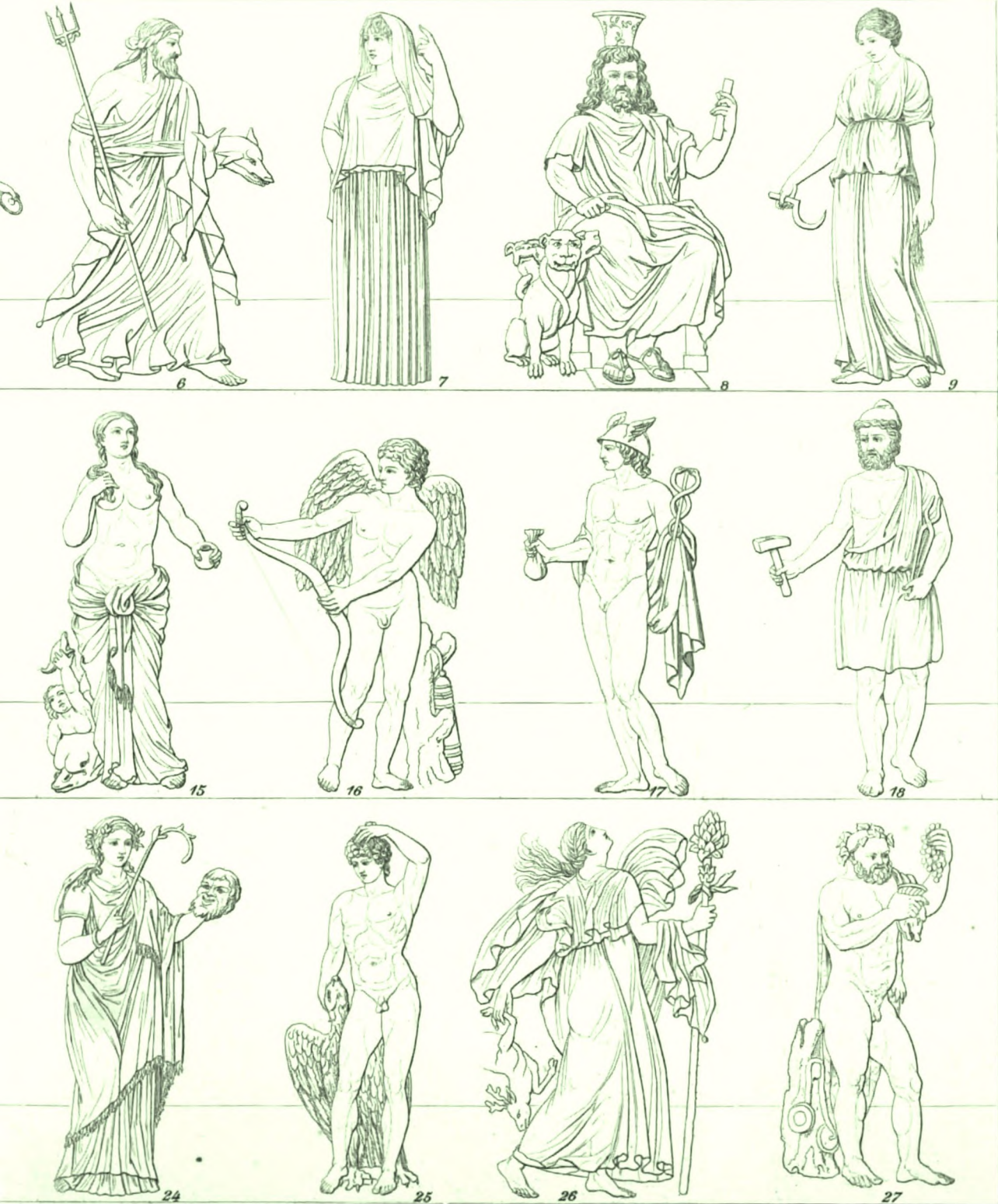

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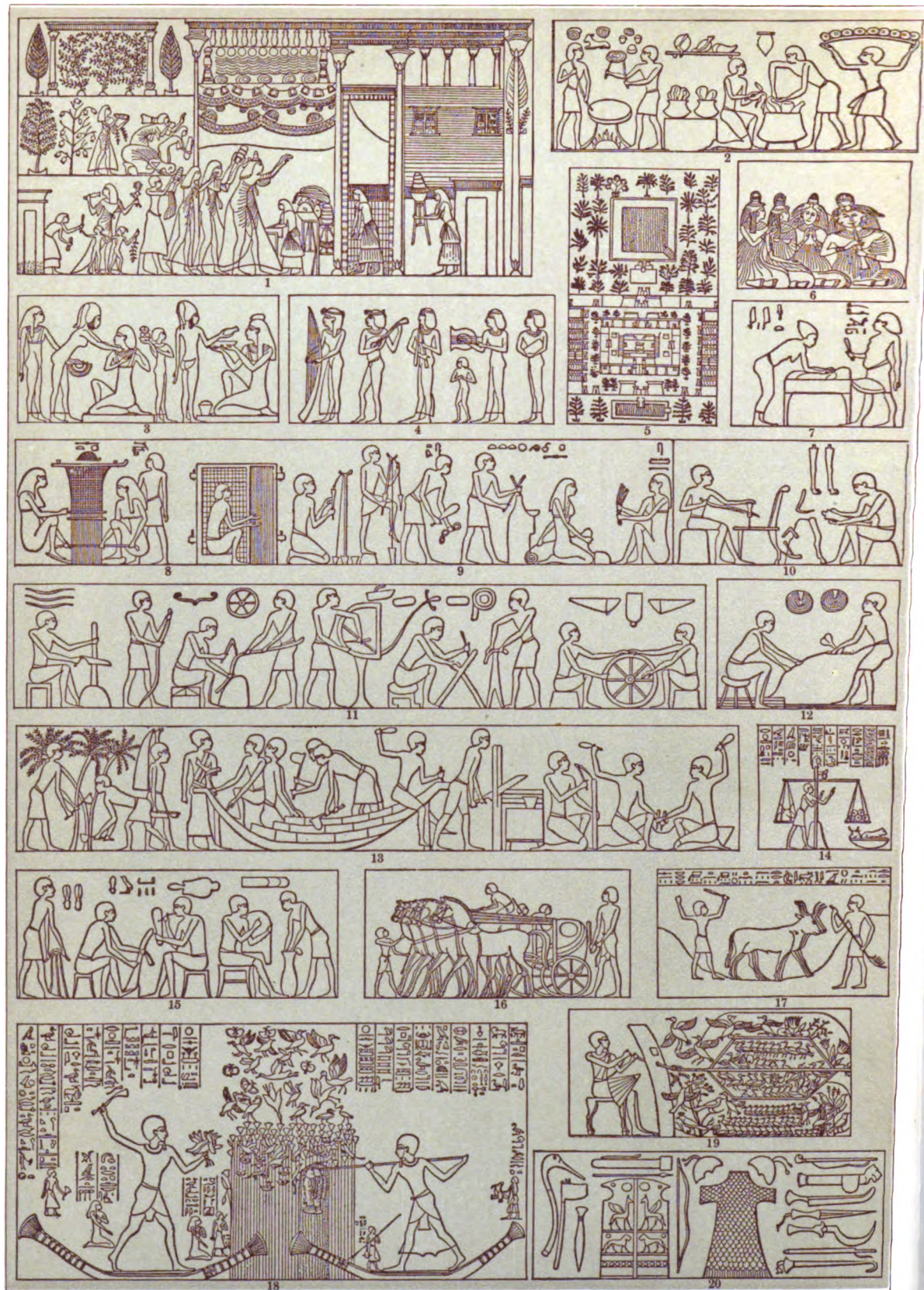
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SCENES FROM THE TOMB-PAINTINGS.—1. Reception of guests in a villa. 2. Kitchen. 3. Toilet of the women. 4. Procession of women with lyre, double flute, zither, and harp. 5. Egyptian house-plan, and garden with pond. 6. Female musicians. 7. Washing. 8. Weaving. 9. Spinning. 10. Cabinetmakers. 11. Wheelwrights. 12. Ropemakers. 13. Shipwrights. 14. Weigher. 15. Shoemakers. 16. Two-horse chariots. 17. Threshing. 18. Bird-catching on the pond. 19. Bird-hunting and spear-fishing. 20. Arms and armor.

W. E. JOHNSON.

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THE
ICONOGRAPHIC ENCYCLOPÆDIA

PREHISTORIC ARCHÆOLOGY

By DANIEL G. BRINTON, A. M., M. D.

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President of the Numismatic and Antiquarian Society of Philadelphia; Member of the American Philosophical
Society, the American Antiquarian Society, the Historical Societies of Pennsylvania and New York;
Corresponding Member of the Anthropological Society of Washington, etc., etc.

HISTORY OF CULTURE

TRANSLATED FROM THE GERMAN OF

DR. J. L. AUGUST VON EYE

EDITED BY

JOHN FOSTER KIRK

AUTHOR OF THE "HISTORY OF CHARLES THE BOLD, DUKE OF BURGUNDY."

WITH A CONTINUATION ON MODERN CIVILIZATION

BY EDWARD C. BRUCE

AUTHOR OF "THE CENTURY: ITS FRUITS AND ITS FESTIVAL."

ILLUSTRATED WITH 60 QUARTO PLATES COMPRISING MORE THAN 1600 FIGURES.

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PHILADELPHIA.

PREHISTORIC ARCHÆOLOGY.

AUTHOR'S PREFACE.

THE history of civilization, in the full sense of that term, begins with the first appearance of man on the globe; but owing to the absence of written records, from which history proper is considered to draw its material, our knowledge of by far the greater fraction of the life of the species is limited and obscure. What we can learn of it must be gained from the relics of human activity which have been preserved, usually by mere accident. The study of these relics makes up the science of Prehistoric Archæology. It is an indispensable introduction to the general History of Culture, as it reveals the earliest condition of the race and the germs of those arts and sciences which in later generations continued in ever-increasing development. It shows the complex fabrics of later social conditions in their simple original forms, and thus facilitates their analysis. While it brings out in strong contrast the very slow progress of man in early times and in his lower conditions compared with more cultivated epochs, it at the same time distinctly reveals the causes of this important change, and thus furnishes a valuable key to the events of history.

As an independent branch of the general history of man it is of recent origin, a creation of the present generation; but the results already attained by it are sufficient to accord it a prominent position in every complete synopsis of the development of the race. So recent, indeed, is this science that no work setting forth its facts and principles in their bearings on general history has heretofore appeared in this country; nor were they to be found in the German edition of the *Bilder-Atlas*. The brief chapter by Dr. Von Eye on the subject in that work is confined exclusively to Europe, and is mainly devoted to a description of the prehistoric relics shown on Plates 2-5. The remaining Plates (1, 6-8) and all the text, except a part of the description of the European relics, have been prepared wholly for the present volume. In their preparation the latest German, French, English, and American researches have been examined, and the attempt made to cover the whole field of Prehistoric Archæology in both continents. After stating the general principles and methods of the science, each hemisphere is considered separately, especial attention being given to American Archæology, pre-eminently to that of the United States. This geographical arrangement is countenanced by the present condition of the science, and will be found convenient to the student.

D. G. BRINTON.

PHILADELPHIA, August, 1886.

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BIOGRAPHICAL SKETCH.

The following is a brief sketch of the literary career of Dr. Von Eye, the author of the *Culturgeschichte* which, rendered into English and somewhat enlarged, forms Part II. of this volume. It is here given for the purpose of introducing the author and his work to the English-speaking public.

JOHANN LUDOLF AUGUST VON EYE, the historian of civilization and art, was born May 24, 1825, at Fürstenau, a hamlet in the then existing kingdom of Hanover. After a course at the municipal gymnasium of Osnabrück, he proceeded in the autumn of 1845, in accordance with the wishes of his parents, to the University of Göttingen for the purpose of studying law. Later, he turned his attention to studies of a philosophical character, which he continued in Berlin. For a time he was tutor at the castle of Bosendorf near Vienna, and later, with a view to the completion of his studies, he resided at various places in Germany. After a short sojourn in the Rhine Provinces he was called to the curatorship of the art and archæological collections at the newly-instituted Germania Museum in Nuremberg, where was published his first work, *Ancient Art and Life*, which has passed through three editions. His second work was the *Gallery of Masterpieces of Old German Wood-engravings*, published in 1857. Both these works were handsomely illustrated, the latter with facsimile engravings, and in their preparation he was assisted by J. Falke. A similar work prepared by Dr. Von Eye was *The Life and Art of Germany Three Hundred Years Ago, as Represented by Pictures of the Period* (Leipsic, 1857). To these widely-circulated pictorial works he afterward added *The Life and Works of Albrecht Dürer* (Nördlingen, 1860), and *A Human Soul, a Picture of the Eighteenth Century* (Nördlingen, 1863).

As his relations with the Germania Museum proved most agreeable, Dr. Von Eye proceeded to the execution of the idea which he had taken for his life-work. This was to combine the results which had been obtained in the various departments of historical science, especially in the history of art and civilization, with the latest geological and anthropological investigations. Under the unifying influence of an ideal point of view, the whole was to be brought into one closely-connected picture. As an introduction to this important undertaking, and for the determination of its standpoint, appeared his essay on *The Essence and Worth of Existence* (Berlin, 1870). Meanwhile, Dr. Von Eye undertook, for the second edition of the *Bilder-Atlas* (Leipsic, 1875), the preparation of the *History of Culture*, which gives a complete outline of that subject. The offer of a professorship by the Brazilian Government led him to make a journey to Rio Janeiro in 1874, but the next year a call from the government of Saxony drew him to Dresden. He here assisted in establishing a museum in connection with the newly-founded school of industrial art. In connection with the movement toward a higher æsthetic development he also composed his most comprehensive work, *The Kingdom of the Beautiful* (Berlin, 1878). In 1881 he returned to Brazil, where he still resides.

PUBLISHERS' PREFACE.

FROM the preceding Preface and Biographical Sketch the reader will learn that the HISTORY OF CULTURE in this Second Volume of the ICONOGRAPHIC series is, apart from the additions and annotations by the editor, a translation of Dr. VON EYE'S *Culturgeschichte* in the *Bilder-Atlas*.

The science which the Germans term *Culturgeschichte* treats of the moral, intellectual, social, and politico-economical, as well as political, development of a people, describing their life in all its phases, either throughout the past or during a particular epoch.

The History of Culture in this volume is replete with details relative to the formative period in the life of nations, and especially treats of the Teutonic peoples, to whom all who speak the English language are indebted in a large measure for their culture, and from whom many of them are lineal descendants.

In the preparation of the present volume the Publishers have endeavored to increase its value to English readers by supplementing the original translated text with contributions from distinguished specialists. In securing this end they deem themselves fortunate in having obtained from the pen of Dr. D. G. BRINTON the part on PREHISTORIC ARCHÆOLOGY, a comparatively modern science that is now attracting great attention; and not less fortunate in the aid they have received from Mr. JOHN FOSTER KIRK, whose introductory chapter and editorial annotations add materially to the value of the text. Acknowledgment is also due to Mr. WILLIAM H. KIRK, who has carefully reviewed and corrected the entire translation.

In the original not more than one page was devoted to Modern Civilization: this was deemed insufficient, and Mr. EDWARD C. BRUCE, whose familiarity with historical matters eminently qualifies him for such a task, has supplied an interesting paper on that subject.

Not the least valuable feature of the volume is the wealth of steel-plate illustrations, and those relating to mediæval times will be found

especially interesting and instructive. These engravings are the work of the best German artists, and are here for the first time made serviceable to those English readers who are unacquainted with the German language.

Illustrations pertaining to Modern Civilization, aside from the initial plate introduced herein (*pl.* 60), will appear in profusion in the subsequent volumes of the series, and will be in no way inferior in technical merit to those found in this and the previous volume. These pictorial representations will be fully illustrative of modern progress in the Arts and Sciences.

It is believed that the topical arrangement of the text and the very complete indexes and table of contents will be found of great service to the reader. The indexes have been collated with much care, and the system adopted of topical indexing and cross-references gives them the greatest practical value. Their highest efficiency as indexes is thus attained, and at the same time they form a repertory of valuable facts and suggestions.

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PREHISTORIC ARCHÆOLOGY

AND

HISTORY OF CULTURE.

PART I.

PREHISTORIC ARCHÆOLOGY.

INTRODUCTORY.

IN a time which is within the memory of men not yet old the study of PREHISTORIC ARCHÆOLOGY (from the Greek *ἀρχαῖος*, ancient, and *λόγος*, a discourse) has established its claim to be called a science. Down to the middle of this century the rude objects of ancient art were regarded as mere curiosities, suitable to the cabinet of a collector, but of little or no importance to the serious student of history. Now, however, it has been discovered that they throw an unexpected light on the earliest condition of the human race, that they are the mute witnesses of a period of its existence far longer than that which comes within the scope of written records, and that they supply us the means of tracing man back almost to his first appearance on this globe, and of following him in his conquests over Nature down to the time when history takes up the thread of his career.

Historical Sketch.—The fact that relics of man's industry are occasionally found in undisturbed contiguity to the bones of strange, unknown, or extinct animals came to the knowledge of intelligent observers long before they appreciated the significance of this relation. Thus, there may still be seen in the British Museum a rude stone spear-head which, about the year 1715, was dug out of the gravel on which most of the city of London stands; this spear-head was found in close juxtaposition to the bones of a fossil elephant. Again, early in the present century an English gentleman of Suffolk found in a fresh-water formation near Hoxne in that shire a number of rude flint implements also associated with elephant bones. These discoveries excited some vague comment at the time, but were not supposed to be of any general interest. In 1828 and 1829 two

French gentlemen, M. Journal of Narbonne and M. Christol of Montpellier, published articles stating that they had discovered remains of human art and fragments of human skeletons in caves in the south of France, undoubtedly coeval with bones of long-extinct quadrupeds. But the eminent palæontologist Cuvier threw the weight of his great authority against these assertions, declaring that man belonged solely to the very latest geological period. Meanwhile, a Belgian physician, Dr. Schmerling of Liège, was, at great expense and infinite trouble, exploring on his own account the caverns in the valley of the Meuse and its tributaries, and in 1833 he published to the world unquestionable evidence that in many of these primitive shelters articles of human workmanship were exhumed, in original deposition with the remains of animals which had become extinct long anterior to the earliest lines of recorded history. In the same year Thomsen, a Danish antiquary, published an excellent article on the stone implements of the ancient inhabitants of Denmark and Scandinavia.

These scattered efforts attracted no attention in the scientific world, and it was not until the French antiquary M. Boucher de Perthes published, in 1847, the results of his observations carried on during the seven preceding years in the gravel-beds of the Somme River, that the doctrine laid down by Cuvier was seriously questioned. M. de Perthes declared that in these gravel-beds he had collected large numbers of flint tools of antique patterns in immediate connection with the remains of the mammoth and other extinct quadrupeds, under conditions which left no other inference possible than that the manufacturers of these tools lived at the same period as the animals. M. de Perthes' views were supported by the researches of Dr. Rigollot in the same river-valley near the village of St. Acheul, close to Amiens.

About the same date Professor Worsaae of Denmark gave to the scientific public the results of his admirable investigations into the so-called *kitchen-middens*, or old refuse-heaps, along the shores of Denmark, referring the oldest of them to an age long preceding that to which the received chronology assigns the creation of man.

Neither of these opinions was received without earnest opposition. But as each year added to the number of such discoveries, and as their conditions became more and more satisfactory to the stringent demands of exact science, doubt slowly disappeared, and the fact of the extraordinary antiquity of many of these deposits became generally recognized. Distinguished geologists, as Sir Charles Lyell in England and Édouard Lartet in France, turned their attention to ascertaining the age of such deposits containing human remains, and pronounced their venerable antiquity beyond question. Later on, skilled antiquaries, as John Evans and W. Boyd Dawkins in England, and the brothers De Mortillet in France, devoted years of patient research to accumulating and sifting facts; societies for the purpose were formed in the principal continental states of Europe; journals were published concerned only with this specialty; and

finally an International Congress was organized which has held repeated sessions, and thus enabled the workers in this field to bring the proceeds of their investigations promptly into comparison with those of others.

In the Western Hemisphere these labors and their results for a long time attracted little attention. It was a received canon in the faith of most men of science that the American continent was peopled at a considerably later date than the Eastern Hemisphere, and any remains of man or his handiwork dating from a really very remote epoch were not anticipated or looked for. At length, however, a series of discoveries in both the northern and southern areas of the continent dispelled this delusion, and have almost convinced the most sceptical that there is scarcely an appreciable difference in the antiquity of man in the two hemispheres. The course of these American discoveries is given on pages 60 *sq.*

Object and Scope of Prehistoric Archæology.—The main object which this science has in view is to restore the history of the race during those periods for which we have no written records. It may be said to go beyond this, however, as it also seeks to throw new light on the relations which the species of man bears to other animals lower in the scale of zoological life, and to illustrate the laws of his evolution, both physical and mental. By seeking to ascertain and depict the very beginnings of the arts of life and of the social and domestic relations and the religions of mankind, it pursues the only trustworthy means to an explanation of what was the origin of these institutions as they now exist. The earliest migrations of nations and the primitive distribution of the species share its attention, and it concerns itself with all that can explain the rise of those broad distinctions which to-day separate the species into so many varieties or sub-species. These and many similar inquiries must be answered by this science of Prehistoric Archæology if they shall ever receive answers.

As in its survey it takes in the whole species as a unit of investigation, so in its scope it includes all portions of the globe which have been inhabited by man. The main land and the isles of the sea are alike its domains. Wherever the painstaking observer can find evidence that man has lived and worked in some unknown and forgotten past, there Archæology takes the field. In its view, nothing that betrays the touch of human fingers or yields the evidence of human life is humble or mean; and it has vindicated the potency of such seemingly insignificant aids by overturning with their testimony canons of belief which the world had accepted without question for thousands of years.

Methods and Principles of the Science.—In reaching its conclusions Archæology by no means confines itself to the works of man. These must be studied with constant reference to their surroundings. Their position in the scheme of geology must be most attentively considered, so as to locate them in time. This requires the identification of the remains of the flora and fauna which are associated with them; an understanding of the physical geography, especially the land-distribution and climate

of those remote epochs; and a careful discrimination between what was originally deposited with the strata and what is owing to later, so-called *intrusive*, inhumation.

A well-established principle of the science is that there is a certain correlation between all the arts in the various periods of human development, by the study of which we are enabled from a very limited number of remains to frame a correct estimate of the whole social condition of the tribe to whom we owe them; much in the same way as from a few scales of a fish Agassiz was able to describe with accuracy its whole anatomy, or as the palæontologist from a single tooth will recognize the class and genus of the animal to which it belonged.

Classes of Objects to be Examined.—Apart from the geologic surroundings, Archæology occupies itself especially with two classes of objects, both pertaining directly to man. One of these is his *osseous remains*, the other the *products of his industry*. The consideration of the former will not occupy us in this volume, as that topic has already received attention in the section on ANTHROPOLOGY, in Volume I. (p. 38) of this work. We shall therefore confine ourselves to an examination of art-products and allied objects which testify to man's existence and labors. Of the latter character are the ashes of his fires, bones of animals broken in a manner peculiar to man, the footprints he has left on the ancient sands—some of which have long survived all other traces of the existence of tribes—stones split in his fires, and the cast-away shells and other refuse from his repasts. At a later date we have in addition to these the remains of his structures, signs of the cultivation of the soil, tombs of various kinds, and the results of his efforts to body forth his ideals of beauty and sentiments of religion. These are, in general, the classes of objects which we shall have to consider.

Prehistoric Chronology.—The general divisions of the prehistoric period of the life of the race have been based, as was stated in Volume I. (p. 169), on the substance most successfully employed to produce a cutting edge. This has led to a classification into the Age of Stone, the Age of Bronze, and the Age of Iron, following the order in which each of these materials in turn became known and was used for the manufacture of cutting instruments. This classification was first introduced to science by the Danish antiquaries, especially by Professor Worsaae, and has been generally received throughout the antiquarian world. But the fact of this succession of materials was familiar to the classical writers of ancient times, and it has been pointed out that these three ages are distinctly named by the Latin poet Lucretius in his celebrated work *De Natura Rerum*, composed about 75 B. C. The passage in which he refers to this succession is as follows:

Arma antiqua, manus, ungues, dentesque fuerunt,
Et lapides, et item sylvarum fragmina rami;
* * * * *
Posterius ferri vis est, ærisque reperta;
Et prior æris erat, quam ferri, cognitus usus.

“The ancient arms were the hands, nails, and teeth, stones and pieces

of the branches of trees; later, the value of iron was discovered, and of bronze; but bronze was in use before iron."

Although these so-called "ages" are primarily divisions with regard to time, they must not be so understood in an absolute sense. They refer quite as much to a condition of culture, of industrial development, as to periods of duration,—indeed, more so, for although the Age of Stone is always considered the most ancient, yet it is true that it exists to-day; for example, among those tribes who have not yet come into contact with civilization and still continue to be wholly ignorant of metals. So late as 1884 several such tribes were discovered in the interior of Brazil by a German traveller.

Again, the development of culture in the Eastern and Western Hemispheres has been, especially in its later phases, essentially different, and we cannot with profit introduce into American Archæology these distinctions. The American tribes never discovered the industrial applications of iron; and although they had a technical knowledge of several metals, and in single instances manufactured instruments of bronze on an extensive scale, the principal material for producing a cutting edge remained everywhere some species of stone. For these reasons we shall treat separately the Archæology of the two hemispheres, and by such a contrast we shall be enabled the more easily to explain the marked differences in culture which existed in these two great land divisions of the globe.

Course of Geologic Time.—The study of the earliest specimens of human art is intimately associated with that of the later geology of the inhabitable areas of the globe. It is only by ascertaining the characters and relative ages of the later deposits and strata, as they now exist, that we can hope to fix with any degree of accuracy the date when man first appeared in any given quarter of the globe, and in what relations the events of his subsequent career down to the era of written record took place. For this reason the archæologist must call to his aid the sciences of Geology and Palæontology, of Zoology and Botany.

Unfortunately, these are not yet able to answer many of the questions which the archæologist would put to them. Even the terms by which the later geologic epochs are designated are not employed with uniformity by the leading authorities on that branch. By some, the term "Tertiary Epoch" is understood to reach down to and include the present time. These say that we are now living in the Tertiary Age of the world. This view has been adopted by one of the most eminent of British archæologists, Professor W. Boyd Dawkins. His division of the geologic record as applied to the history of man is as follows:

THE TERTIARY AGE.

I. *Eocene Period.*—There are living representatives of the orders and families of this period, but not of its genera or species.

II. *Miocene Period.*—Represented to-day by living genera, but all its species are extinct.

III. *Pliocene Period*.—Many of its genera and a few of its species are represented by living forms.

IV. *Pleistocene Period*.—Most of its species are living to-day. Man appears on the globe.

V. *Prehistoric Period*.—Man abundant; animals are domesticated by him, and food-plants are cultivated.

VI. *Historic Period*.—A record of events is preserved by the art of writing.

It will be observed that Professor Dawkins finds the earliest man in the Pleistocene, which he considers a late period of the Tertiary Age. He assents to the statement that species of the next preceding period, the Pliocene, still survive in limited numbers. Hence there is nothing essentially impossible in the supposition that man also was then existent. To this he replies: "Of twenty-one fossil Mammalia in the Pliocene of Tuscany, only the hippopotamus is now living on earth. It is improbable that man could have been present in such a fauna. They belong to one stage of evolution, and man to another and a later." He is also of opinion that the earliest race of men—the "River-Drift Hunters," as he calls them—did not originate in Europe, and hence the most ancient remains are not to be found there. He is inclined to the view that these earliest representatives of the species invaded Europe in preglacial times along with the other living species which then appeared. Some warm or perhaps tropical region of Central Asia was man's birthplace, and thence he migrated to the localities which later became his home.

A widely-different scheme is that proposed by the eminent French archæologist, M. Gabriel de Mortillet. He is prepared to recognize the relics of the infant arts of man at a very much earlier date than Professor Dawkins, and moreover makes a quite diverse arrangement of the later geological periods. The Tertiary he considers to have closed with the Pliocene Period, and to have been followed by the Quaternary. Many geologists who agree with him in this consider the Quaternary Age as embracing the present time, and subdivide it into the Diluvial, which corresponds to the older Quaternary, and is characterized by the remarkable aqueous phenomena attending the glacial epochs; and the Alluvial, which refers to the calmer and more gradual deposition of the river and delta strata, as we see them forming to-day. De Mortillet, however, confines the term Quaternary to the former or Diluvial Period—to an epoch characterized by the appearance and retrocession of vast glaciers, approaching the tropics from both poles and finding centres of formation in the Alps, the Andes, and other lofty mountain-chains. This period, he thinks, closed—for Western Europe at least—with some unexplained catastrophe which leaves a long hiatus in the relics of human occupation. From the close of this hiatus to the present day he calls *actual* or *present time*. (See Vol. I. pp. 25, 26.)

The subdivisions of this scheme M. de Mortillet obtains by naming them from particular localities—or "stations" as they are termed—where

typical specimens of a special stage of industry have been discovered. He thus prepares the following plan:

CHRONOLOGICAL SYSTEM OF PREHISTORIC ARCHÆOLOGY, ACCORDING TO
GABRIEL DE MORTILLET.

Geologic Time.	Ages.	Periods.	Epochs and Stations.	
Present time.	Age of Iron.	Roman.	Early Roman.	
		Etruscan.	Third Lacustrian. Epoch of Tumuli.	
	Age of Bronze.	Bohemian.	Second Lacustrian. Beginning of Second Lacustrian.	
	Quaternary time.	Age of Stone.	Neolithic, or polished stone.	Robenhausen. First Lacustrian. Dolmens and cromlechs.
Palæolithic, or chipped stone.			Magdalénien. The cave relics. The reindeer.	
			Solutréen. The mammoth.	
			Moustérien. The cave bear.	
			Chelles and St. Acheul. The mammoth and <i>Elephas antiquus</i> .	
			Eolithic, or fired stone.	Thenay and Portugal.

In the present work we shall adopt the geological system of the later strata as proposed by De Mortillet. We shall thus consider the Tertiary to embrace the Eocene, Miocene, and Pliocene, and to terminate with the latter; the terms Pleistocene, Post-Pliocene, and Diluvial will be considered as synonymous with Quaternary, which latter expression will generally be preferred; while Alluvial or Recent deposits will be reserved for expressing those which may be considered as still in process of formation. The minute subdivisions of these epochs which have been advanced by some archæologists need occupy our attention the less as the evidences of their correctness are by no means convincing.

Physical Geography of the Quaternary or Diluvial Epoch.—The remains of human art attributed to the Miocene and Pliocene of the Tertiary are too few, and their actual age is too uncertain, for us to accept the presence of our species on the earth at that time as demonstrated. On the contrary, it is highly unlikely that a creature so finely organized as man could have survived for so long a period as that hypothesis involves. We may therefore consider the era of his advent to have been some time in what De Mortillet calls "Quaternary time," and the geologic conditions which then prevailed may profitably occupy our attention.

At its commencement there was much more water, and correspondingly less land, near the northern pole of the earth than at present. The vast

tundras of Siberia and the plains of Northern Europe quite down to the latitude of Poland were covered with an open sea. The Black Sea, the Caspian, the Persian Gulf, and the Indian Ocean were united by a broad and not deep water-way, through which the currents of the tepid tropical sea flowed toward the pole. On the other hand, the now-dissevered land-areas of the Northern Atlantic were connected into one continent. No separation existed between Northern Africa and the Iberian Peninsula. Italy, Sardinia, Sicily, and Malta are but the fragments of one original continuous territory which extended southward to Tunis and Tripoli. Most of Northern England and Scotland was under water, but the valley of the Thames was above the ocean, and the south coast of England, extending much farther into the sea than at present, was united to Wales, to Ireland, and to a long coast-line which, trending north-westward, embraced Iceland, and the southern point of Greenland, and continued unbroken to include Labrador, Newfoundland, and other parts of the continent of America in high northern latitudes. The existence of this land-bridge between the Old and New Worlds in the early Quaternary (Pleistocene) Epoch is attested by the close similarity of the fauna and flora of the two continents in high latitudes, by the presence in both of the same species of living land-shells, by the uniformity of glacial action in both areas, and finally by the demonstrable presence of early man on each side of the bridge.

The Glacial or Ice Age.—What brought about the violent catastrophe which resulted in the dissevering of the two hemispheres by a broad and cold ocean? The reply is, that the same mighty glaciers which levelled the prairies of the West, which scooped out the basins of the Great Lakes between Canada and the United States, which tore into shreds the coasts of Maine, of Scotland, and of Norway, leaving them seamed with deep fjords and scarred peninsulas,—this same irresistible force descended on the rather narrow strip of land which at the close of the Tertiary united Europe and America, and tore it into fragments, of which but a few, as Iceland, the Faroe Islands, and Newfoundland, survive above the engulfing waves. Man, ignorant, defenceless, and feeble, could oppose to this overwhelming catastrophe only the marvellous tenacity of life with which he is endowed (see Vol. I. p. 32) and the resources suggested by his intelligence wherewith to combat the changes which took place in his environment. These were different in the two continents, and led him, as before observed, into divergent paths of development. We shall follow his career first in the one hemisphere and then in the other, beginning with that in which there is reason to believe he commenced his existence as man.

Relations of Glacial Phenomena to Archæology.—It will be seen from the above that the Glacial Age of the geologist is the most important landmark in the early history of the human species. The archæologist who would explore the remotest tracts of his science must acquaint himself with the localities occupied by the great glaciers, the phenomena

which remain to attest their advance and retrogression, and the periods of time during which they continued in different areas. The investigations of numerous observers have already thrown much light on these questions. For instance, we have learned that the glacial area is invariably defined by the presence of striæ or scratches upon the surface of rocks, by beds of so-called "till," a mixture of clay, coarse sand, and angular stones, and by the large heaps of broken rocks and boulders, known as "terminal moraines," which mark the limits of the ice-sheet.

Extent.—By the study of these phenomena it has been ascertained that the great glacier in the Northern Hemisphere did not extend equally in all directions from the pole. On the contrary, not more than one half of the surface at the latitude of 60° N. was covered by it. It began at the longitude of Tcheskaia Bay in Northern Russia, and extended westward to the Mackenzie River in British America. Stretching southward from a line connecting these two points, the ice-sheet deposited its terminal moraines in the suburbs of London in Europe, and in the State of Kentucky in the United States. On the other hand, Siberia and Alaska have revealed no glacial signs which can be attributed to this great geologic event. Their moraines are assignable to local glaciers only. It will readily be seen what a controlling influence this geographical distribution of the ice-sheet must have exerted on the migrations of primitive man.

Location of Human Remains.—It is doubtful if any relics of human art have ever been discovered in the undisturbed moraines of the great Glacial Age. Such claims have indeed been advanced for several finds in Sweden, as that at Yoldia on the west coast and at Järavall in the province of Scania. But it has been pointed out by M. Otto Torell that in both these, as well as in all similar instances, the relics were decidedly in advance of the culture of the Palæolithic Age, and therefore undoubtedly belonged to later, so-called "intrusive" deposits.

Interglacial and Postglacial Strata.—Man, in fact, could not have lived upon the ice-sheet itself, and even were the habitable land well peopled at the time we should not expect to find art-remains in the moraines. When, however, the ice-sheet melted and its borders receded to the north, the hunting and fishing tribes would follow it up, and might leave relics of their industries in the soil, which a second glacier would cover with its till. Discoveries of stone implements in such interglacial strata have been reported by various observers. Again, when the glacier melted it would swell the watercourses and pour down mighty torrents of turbid water freighted with mud, sand, and stones. These form the "postglacial gravels," in which numerous remains of human industry occur, and which offer a rich field for the student of Prehistoric Archæology. In such interglacial and postglacial deposits are found the earliest traces of man in the Western Hemisphere.

Meaning of the Term Man.—It may be well, however, to say something about what is to be understood by this term *man*. Some writers,

who are more interested in refinements of speech than in the ascertaining of facts, have taken exception to the application of this word to an animal to which are denied the sentiment of religion and the power of language. To such critics we may quote the words of Darwin: "Whether primeval man, when he possessed but few arts, and those of the rudest kind, and when his power of language was extremely imperfect, would have deserved to be called *man*, must depend on the definition which we employ. In a series of forms graduating insensibly from some ape-like creature to man as he now exists, it would be impossible to fix on any definite point where the term *man* ought to be used. But this is a matter of very little importance." Fully agreeing with him as to the small importance of this point, we shall in this work employ the term *man* as appropriate to that species the members of which alone of animals have in all time been acquainted with the use of fire and known how to manufacture tools.

PREHISTORIC ARCHÆOLOGY
OF THE EASTERN HEMISPHERE.

ALTHOUGH very early traces of man's industry have been discovered at distant points throughout the Eastern Hemisphere—as, for instance, near the Cape of Good Hope and in Egypt in Africa, in Southern India and in Japan in Asia, and in Europe in very many localities—there is so much more material of a trustworthy character in the last-named continent that we shall confine ourselves principally to a discussion of the relics of art there found.

To understand the light which these relics throw on the history of primitive man, we must attend to the changes which have taken place in the climatic conditions and the fauna of Europe since it first became the abode of man.

Changes in the Climate of Europe.—Even within historic times the climate of Europe has undergone material changes. From many expressions in the classical writers of Greece and Rome it is evident that the temperature of the continent was then generally lower, the annual rainfall was greater, and destructive storms were more frequent. The amelioration which has taken place in the last two thousand years is doubtless owing in a great measure to the removal of the forests and to the cultivation and drainage of the soil. But probably there are also profounder causes at work. This growing mildness of the climate is a phenomenon which has been gradually progressing for many thousand years, from a period when vast layers of ice from three to six thousand feet in thickness covered the land from the extreme north as far south as the Alps, and on the coast almost to the Irish Sea. To be sure, this does not demand a climate of arctic rigor, as at first we might suppose. Observation of existing glaciers proves that they do not form so rapidly in a climate of extreme and continuous cold as under conditions of abundant moisture when the temperature ranges but little above or below the freezing-point. They are produced by heavy snowfalls imperfectly melted by the action of a degree of heat little above freezing. It has been argued very plausibly, therefore, that even at the period to which we refer those parts of the continent not actually covered by the ice-fields might have enjoyed a climate cold and damp indeed, but much more productive and genial than that which obtains to-day in Iceland or Greenland. This explains satisfactorily the fact that we find abundant evidence that a rather highly-gifted and numerous population maintained themselves in Southern and Central Europe at that distant day.

The Ice Age had been preceded by one which may be located in time at the beginning of the Quaternary or Pleistocene Period, when the climate was decidedly milder than it is at present. The indications are that it was not actually tropical, but moderately warm and moist throughout the whole year—so much so that various animals and plants which now scarcely exist in their native state outside the tropics lived in considerable numbers within the area of what is now France and England.

The Fauna of Ancient Europe.—While man has striven successfully with these climatic changes, and has even constantly gained ground in spite of them, such has not been the case with very many other animals apparently better equipped than he to struggle with the harsher aspects of nature. The appearance and disappearance of these lower animals serve to mark the epochs of geologic time, and with this the eras in the unwritten history of the primeval human race; hence their study is one of peculiar interest to the archæologist. Beginning with the oldest deposits of the Quaternary, we shall name and describe some of the most characteristic of these ancient European animals.

Fauna of the Latest Tertiary and Oldest Quaternary.—At the undefined epoch when the Tertiary merged into the Quaternary there lived in South-western Europe certain animals whose rare remains have attracted the most earnest attention of antiquaries. They were large species of apes, and have received the names *Dryopithecus*, or “tree-ape,” and *Anthropopithecus*, or “man-ape.” The bones of these creatures have been exhumed from the late tertiary deposits in Spain, in France, in the valleys of the Pyrenees, and in Northern Italy. Some writers maintain that some of these species were intelligent enough to build fires and to flake stones by burning them, thus securing a sharp-edged tool or weapon which they employed in some simple arts. These writers, indeed, straightly claim that this *Anthropopithecus* was the zoological precursor, the lineal ancestor, of man, and that therefore we need not seek any other locality for his first advent on the globe than this south-western part of the European continent as it existed at that ancient date. Of this opinion it may be said that the finds have been too few, and their character too uncertain, to justify its acceptance as a scientific statement; and yet there is so much of a collateral character to give it probability that we may consider it as plausible an hypothesis as has yet been offered to explain the descent and assign the earliest habitat of the human species.

We are not sure that monkeys and apes frequented the forests of Southern Europe in the early Quaternary; but it is certain that the African elephant wandered in large troops over its plains and the hippopotamus (*H. major*) bathed in its rivers. With these were associated several species of rhinoceros and numerous large and ferocious felines. One of the most characteristic of the latter was the formidable “sabre-toothed tiger” (*Machærodus latidens*); it was of great size and strength, armed with long superior canine teeth projecting beyond the line of the jaw and shaped like the blade of a sabre, whence its name. This fear-

inspiring species of the Carnivora disappeared from Europe when the cold of the Ice Age set in.

Scarcely less terrifying to the unarmed men of that day must have been the "cave lion" (*Felis spelæa*) and the "cave bear" (*Ursus spelæus*); and both of them were much more numerous. Indeed, the remains of the cave bear are so abundant in the early Quaternary that the French geologist M. Lartet has proposed for that period the distinctive name "The Age of the Great Cave Bear." It was a huge animal, surpassing in size the grizzly bear of the Rocky Mountains by fully one-fourth. It was so plentiful that the remains of over eight hundred individuals have been taken from one cavern, and its bones have been unearthed in almost every country of Europe and also in Northern Africa. Beginning its life as a species in the Pliocene of the Tertiary, it appears to have survived far into the Ice Age of the Quaternary.

The cave lion was the largest of all the felines of which palæontology tells us. It possessed in an exaggerated degree the traits by which the lion is distinguished from the tiger. The period when it was most widely disseminated was in the earliest Quaternary. It has left its remains in England, France, Germany, Switzerland, and Italy.

These, and other species which might be named, point to a climatic condition for the early Quaternary approaching a subtropical, oceanic character, somewhat similar to that found at present in the Bermuda Islands or the Azores. The latter are almost in the latitude of New York and Madrid, but enjoy a climate which ripens in perfection such tropical plants as the sugar-cane and coffee. This fact illustrates that a high latitude does not necessarily imply a frigid climate. Cold or warmth depends much more on the disposition of the ocean-currents and the position of land- and water-areas than on any other factor. All the climatic variations recorded by geology can be explained by geographical hypotheses.

Fauna of the Middle and Late Quaternary.—The climate of the whole of Europe underwent a gradual refrigeration during the middle and late Quaternary until the advancing glaciers covered most of the habitable land of the northern portion. This was accompanied by a striking change in the character of the principal animals. Those types which, as we have just seen, recall the denizens of the Torrid Zone gave way to others whose homes we must seek amid the snows of Arctic latitudes.

The largest and most remarkable of these was the "mammoth" (*Elephas primigenius*, *pl. I, fig. 29*). It was also one of the most abundant and widely distributed. Its massive tusks, enormous teeth, and heavy bones have been exhumed in large quantities in France, Belgium, Germany, Russia, Siberia, and the north-western portion of North America. There are many reasons for believing it to have been an animal not only adapted to a cold climate, but one that shunned the heat. Very few of its remains have been discovered in Italy, none in the Iberian Peninsula. They occur most abundantly on the bleak plains of Northern

Siberia, where ivory tusks are so abundant that for generations they have formed a staple article of local traffic. There also it survived the longest, and we have good reason to believe that the last representatives of the species were alive nearly to the commencement of the historic period.

In 1877 there were discovered near the village of Karetcharovo, in Central Russia, bones of the mammoth in immediate contiguity with stone implements of the Neolithic Age. But we scarcely needed such evidence, for bodies of the animal in an almost complete state of preservation have been not unfrequently reported from the plains of Northern Siberia. The most celebrated discovery of the kind was made by a Tungusian hunter in the year 1799. In his journeys near the mouth of the river Lena he came across a carcase encased in ice and thus very perfectly preserved. Fortunately, the find came to the knowledge of a member of the Academy of St. Petersburg, who rescued most of it, and gave a careful description of the animal as it was when discovered. It was a male, with a long mane on his neck; the skin was of a dark-gray color, covered with reddish wool and coarse, long black hair. The entire skeleton was sixteen feet four inches in length, and its height was nine feet four inches. The tusks measured along the curve nine feet four inches, and in a straight line from the base to the point three feet seven inches. The skin was so thick and heavy that it required ten persons to lift the one-half of it which was still preserved.

It is evident that the mammoth was constituted to support extreme cold. Being exclusively herbivorous, it fed upon the foliage, branches, and young cones of the Coniferæ and on the rank grass of the steppes. There is not the faintest tradition of its existence within historic times.

Another powerful herbivore, whose remains are constantly associated with those of the mammoth, is the "woolly rhinoceros" (*R. tichorhinus*), or the rhinoceros "with nostrils separated by a wall," so called from an osseous septum which divides its nose. This species was larger than any at present existing, and carried two horns upon its nose. Unlike its relatives of the present day, it was a decidedly glacial animal. Its skin lay close to its body, not in heavy folds as is so characteristic of the present species, and it was protected from the inclemencies of the climate by thick and abundant woolly hair. There is no doubt as to these particulars, for the Siberian ice has fortunately preserved very satisfactory specimens of this extinct quadruped. Its remains have also been discovered in France, Great Britain, Germany, and Russia. It is believed to have perished sooner than the mammoth.

A contemporary of these was the "great Irish deer" (*Megaceros Hibernicus*, *pl. 1, fig. 31*), remarkable for its stature and the spread of its antlers. Its skeletons show it to have reached nearly eleven feet in height, and to have borne on its small head antlers which sometimes measured fully eleven feet from tip to tip. It has been called the "Irish deer" from some fine specimens obtained from the peat-bogs of Ireland,

but its remains abound in France, Belgium, and Germany. It was extinct before the historical period began.

The urus (*Bos primigenius*) and the aurochs (*Bison Europæus*) were two large bovines which roamed the forests of Central Europe in the later Quaternary, and have disappeared only within comparatively recent times. The urus is mentioned by Cæsar as hunted in his day in the Hercynian Forest, and did not entirely die out until the sixteenth century; while a single herd of the aurochs has been preserved in a forest in Lithuania by the care of the Russian government. At one time both these species roamed over England, France, Germany, Switzerland, and the adjacent regions.

Of predatory animals there were various species of dogs and numerous hyenas. One of the latter, known as the cave hyena (*Hyæna spelæa*), was much larger than any species now living, and from its remains must have been very abundant. Another species, the spotted hyena (*H. crocuta*), resembled that which at present is found in the vicinity of the Cape of Good Hope.

Horses of several species became very common toward the close of the Quaternary. They were a small race, rarely standing five feet in height, but strongly built and with large teeth. Apparently, they were used by the inhabitants as food, as at one locality, near Solutré in France, an immense collection of their bones was discovered, representing, according to one antiquary, the remains of forty thousand individuals. They were probably not a domesticated animal at this period.

The most interesting and characteristic animal of the late Quaternary was the reindeer (*Cervus tarandus*). Its bones are found in France, Belgium, and Germany, but not in Spain or Italy. Long before the beginning of the historic period it had migrated to the far North. The reindeer is essentially a glacial animal, and demands a decidedly cold climate for its existence. At present it cannot reproduce its kind even in the climate of St. Petersburg or Stockholm. Hence the frequency of its remains in the deposits of France and Belgium may be considered conclusive testimony that at the period when it abounded in those localities they were under arctic conditions of temperature. As these became modified by a gradual change to a higher annual temperature, the reindeer, with his companions, the musk ox and the musk sheep, migrated to the North.

These latter are strictly arctic animals. Of all the large quadrupeds, the musk ox can bear the greatest cold and can glean a subsistence where even the reindeer perishes. At present it has entirely disappeared from Europe and Asia; but in the Arctic regions north of British America, no matter to how high a latitude the daring explorers penetrate, they find the tracks of herds of musk oxen with their steps directed to yet more polar climes. What must have been the climate of the neighborhood of Paris and London when such a creature found there a congenial home?

General Divisions of European Archæology.—Some archæologists have sought to fix the various periods of man's technological development by a reference to the most characteristic contemporary fauna. Thus, M. Édouard Lartet in France and the principal Belgian writers on the subject divide the prehistoric chronology of the race in Europe as follows:

- I. The Age of the Great Cave Bear.
- II. The Age of the Mammoth.
- III. The Age of the Reindeer.
- IV. The Age of Domestic Animals.

Such a classification strikes the imagination, and is easily remembered, and for these reasons is useful; but it is lacking in precision, and, moreover, is less desirable than one which would take its data from the evolution of man's own industrial powers. The somewhat elaborate scheme quoted from M. de Mortillet on page 19 is objectionable, as confined too much to the horizon of France, and as depending also on criteria outside of human activity.

The plan which will be adopted in these pages will not be open to these objections. Its subdivisions are as follows:

Classification of Prehistoric Remains.

I. AGE OF STONE.

1. Palæolithic Period: instruments of rough or chipped stone.

- A. Epoch of simple implements;
- B. Epoch of compound implements.

2. Neolithic Period: implements of polished stone; pottery.

- A. Epoch of megalithic constructions and kitchen-middens;
- B. Epoch of the early lake-dwellings.

II. AGE OF BRONZE.

- A. Epoch of later lake-dwellings;
- B. Epoch of mound-burials.

III. AGE OF IRON.

Epoch of introduction of iron manufacture.

For our present purpose it would not be profitable to carry the division farther.

The most important distinctions are those in the Age of Stone. It required apparently an enormous duration of time for man to acquire the art of rubbing one stone upon another, so as to polish the surface and obtain a more even and regular edge. The discovery of this procedure marks an epoch in the history of the race.

Of little less moment was his invention of compound instruments; that is to say, of those composed of several parts, as the bow and arrow, the spear with its shaft and blade, or the axe with its head, its helve, and the means of fastening the one to the other. These were not early acquisitions. During long ages man contented himself with such tools or weapons as he could frame of a single piece of wood or stone, simply holding it in his hand. When he found he could increase its

effectiveness by fitting it to a handle, he had made a discovery that marked an era in his culture.

He might, indeed, in his rudest ages have lashed a stone to the end of his club to give it greater weight, or have inserted a sharp spall of flint in the split end of a stick; but these are not compound implements in the proper sense of the term. The expression should be confined to such as show in their several parts that they were manufactured with the clear design of fitting and joining one part to another. Thus, the arrow-head with its stem and barb, the stone axe with its side-notches or groove, the semilunar knife with one edge broad and straight for inserting in a handle, the article of any shape with a perforation the purpose of which could only be to attach it to some other object,—all these reveal a settled and preconceived plan, an intentional adaptation of means to an end, which in the earliest efforts of his productive genius man does not seem to have possessed.

I. THE AGE OF STONE.

I. PALÆOLITHIC PERIOD.

A. EPOCH OF SIMPLE IMPLEMENTS.

No doubt, as Lucretius said (see p. 16), the first arms or utensils of men were branches of trees or stones in the shapes in which they naturally offer themselves, without dressing of any sort. As has been previously shown in Volume I. (p. 22), the higher apes and monkeys are sufficiently intelligent to select, and even to preserve for use, sticks and stones suited to their wants. The earliest efforts at making a tool were little more than breaking a convenient fragment from a rock or shaping one already nearly of the contour desired.

Distinguishing Marks of Rude Tools from Natural Forms.—From this close imitation of natural processes arises a constant difficulty in examining the oldest and the rudest specimens of human workmanship to decide whether they do or do not show undoubted signs of human handicraft. The cardinal questions of the antiquity of the race turn upon this point, and hence it has received a corresponding amount of attention from archæologists. Specimens which to the untrained eye are merely broken stones convey to the erudite antiquary indubitable evidence of the formative skill of human intelligence. What these evidences are must be known in order to appreciate the value of such researches as we are about to describe.

Evidences of Antiquity.—The first proof of the antiquity of a stone implement is that it has been found in a deposit in undisturbed connection with other objects whose age is beyond question. Of these the most conclusive are the bones of extinct animals, the shells of species no longer living at the locality, or fragments of plants whose species have long disappeared. A close study of the strata of the deposit may be decisive. Thus, many remains in the Belgian caves are covered with an undisturbed

layer of fine mud which can be traced over a wide area, and which must have been deposited at some time when the whole country was overflowed with a wide expanse of still, muddy water. Others are underneath a floor of stalagmites, which could only have been formed by the gradual accretions of thousands of years. Facts of this kind bear positive testimony to a great antiquity.

Weather-wearing, or Patine.—The appearance of the implements also indicates a remote age. It is well known to mineralogists that the surface of even the hardest stones undergoes a chemical change on exposure to the atmosphere. It may be very slight, and perceptible only by the microscope, but generally it is visible to the naked eye. The French call this *patine*, the English "weather-wearing." By studying it closely a practised eye will readily detect a modern from an ancient fracture of a stone, and will thus be exempt from the deceptions which are sometimes practised on scientific observers.

Varieties of Stone.—The variety of stone often serves as a guide. The natural dispersion of rocks can often be clearly defined, and what lies beyond this must be attributed to other agencies. Thus, if a piece of obsidian were found in undisturbed alluvium on the Atlantic seaboard of the United States, it would testify to the presence of man as clearly as a perfect implement. The green mineral jade or nephrite has thus served to trace the migrations and commerce of extinct tribes. Flint chips from a particular variety of stone obtainable only from a locality known as Flint Ridge, Ohio, have been found on the banks of the Mississippi; their presence there testifies unmistakably to human conveyance (see p. 82).

Evidences of Man's Workmanship—Adaptation to Use.—A leading evidence of man's handiwork is a prevailing unity of shape adapted to a purpose. If we exhume from an ancient undisturbed deposit a number of stones roughly broken into similar shape and size, and adapted to holding in the hand or to adjusting to a helve, we have in this strong cumulative evidence that they are products of human ingenuity. Blind natural forces do not work in this way, and, no matter how little else there may be to indicate their origin, we are not likely to err in assigning such specimens to some ancient tribe.

Traces of Use.—If in addition to this such stones show traces of use, the edges being worn in such a manner as would naturally arise from their employment as cutting, scraping, or breaking instruments, then the probability that they were made and used for such purposes by intelligent creatures is further strengthened.

Effects of Fire.—The effects of fire on stones are altogether different from those of any other agency, and when we perceive that fragments otherwise of doubtful origin have been subjected to igneous action which geological surroundings do not explain, we can almost positively assert that they betray the presence of man, in all times the only fire-maker.

Primary and Secondary Chipping.—Finally, the technical method of

preparing the earliest stone implements is characteristic. It was by a process of fracture, known as *primary* and *secondary* chipping. By the former the stone was broken off from its original matrix, and by a few well-directed blows brought approximately into the shape desired. In many stones which break with a conchoidal fracture, as flint, chalcedony, and jasper, when a fragment is detached by a sharp blow a semiglobular prominence is produced immediately below the point of impingement. This is called the *bulb of percussion*, and is almost characteristic of a blow aimed by an intelligent hand at a particular spot. The *plane of percussion* is the comparatively level surface upon which the blow is struck, and the *conchoid of percussion* is the conchoidal surface of the stone produced by the force applied. A close study of these three peculiarities reveals differences between them, when they are produced by natural and when by intelligent and directed force, sufficient to constitute them testimony of a high order to the presence or absence of intelligent design.

Secondary chipping, called by the French *rétouche*, is the series of light fractures at the edge of a stone produced in order to obtain a symmetrical shape and a finer cutting edge. When the secondary chipping is such that these results are secured, it is considered proof positive of the handiwork of man, for we cannot conceive that the chance work of natural forces would combine to this end, any more than that if we threw down promiscuously the separate letters of the alphabet they should arrange themselves into a verse of poetry. The highest style of secondary chipping is when the flakes thrown off were long and narrow and precisely of the same width and thickness. This is called *parallel chipping*, and is seen only in the finest specimens of the art of the Stone Age, especially in relics from Denmark.

The Most Ancient Specimens of Human Art.—What are believed by many to be the most ancient remains of human industry yet discovered in the Eastern Hemisphere are certain worked flints from a deposit near Thenay, in Central France (*pl. 1, figs. 1, 2*), department of Loir-et-Cher, and similar specimens in silex from the alluviums of the river Tagus in Portugal (*fig. 3*).

The former were brought to the notice of men of science in 1867 by the Abbé Bourgeois. They consisted of shaped stones with considerable uniformity of size and appearance, some showing marks of exposure to fire and others rough secondary chippings. Several competent geologists, who examined with great care the deposit from which they were obtained, pronounced it to be of the middle or late Tertiary.

The chipped siliceous fragments from the ancient bed of the Tagus near Lisbon were discovered by M. Ribeiro, and this stratum also has been declared by able judges to be of Tertiary Age. The supposed implements have a similarity of shape among themselves, but in no instances do they present secondary chipping or traces of the action of fire.

While several continental archæologists of repute not only accept these remains as the work of man—or of the anthropoid which was his

precursor and ancestor—but also place them in the remote geologic age mentioned, thus tracing man's ancestry in France and the Iberian Peninsula back to the middle Tertiary, the more cautious English writers, notably Professor Dawkins, have refused their assent to these conclusions.

These authorities point out the inherent improbability of the survival of the species through so long a duration of time; moreover, the specimens from Portugal rest so equivocally between natural and artificial shapes that they leave doubts in minds quite willing to accept them; and although this can scarcely be said of the Thenay flints, the age of the deposit where these occur has not been settled beyond dispute. While, therefore, M. de Mortillet and with him most of the French archæologists have declared themselves of the opinion that a fire-making, tool-using animal flourished on French soil far back in the Pliocene, if not in the Miocene, such an interpretation of the facts has not been accepted by other antiquaries. The shape and character of these much-discussed relics may be seen in the illustrations on Plate I (*figs.* 1, 2, 3, the last from a supposed Tertiary deposit near Lisbon).

River-Drift Implements.—Avoiding this confessedly hazardous discussion, we may name as the earliest unquestioned relics of human art the flint implements dug from the river drift in England and from the gravel-beds of the river Somme in France, already referred to on page 14. The same forms occur, indeed, in many other localities in France, but they have been longest and most successfully studied in the valleys of the Somme and Marne Rivers, and the specimens there found have been taken as types of the whole. In the valley of the Somme the implements occur in gravel-beds, at Abbeville, St. Acheul, and other localities, at a depth of thirty and thirty-five feet and less. They are roughly chipped from the flint nodules occurring in the chalk formations along the valley, and are so numerous that it has been estimated that more than twenty thousand specimens have been obtained within the last thirty years. Indeed, this very abundance has been used as an argument against their human origin. They bear, however, in their unity of form and material, in their evident adaptation to use, and in the signs of hand-work upon them, unmistakable evidence that they were the product of human ingenuity. The type known as that of St. Acheul, of which we give an illustration (*pl.* 1, *figs.* 4, 5), will be sufficient evidence of this. Natural cleavage alone would never produce an example of this completeness; and it is only one of thousands. Implements of this form are usually six to eight inches long, and of an irregular oval shape, the outline having often been largely determined by the original shape of the nodule of flint. One extremity is generally smaller than the other and more carefully chipped, so as to produce a sharp point or cutting edge. The other extremity is often in the natural state, and was obviously left so as to be conveniently grasped by the hand. Hence, French antiquaries call them *coup de poings*.

The implements which have been collected at Chelles in the valley of the river Marne have been considered even more rudimentary, and consequently of older date, than those of the St. Acheul type; to which, however, they bear a generic similarity. They are chipped in large flakes, and are on the average rather smaller. They are not associated with any other form, though varying more or less in size and workmanship. This fact is held to prove that the primitive people who manufactured them knew but this one implement of stone, which probably served them both as tool and as weapon. They were at the very beginning of technical development.

The drift implements in England have been obtained from the valleys of the Thames, the Lark, the Little Ouse, and other streams, principally in the south of England. They bear a general resemblance to those of France, but are less clearly separable into different archæological horizons; that is, the types of the different epochs appear to be more commingled. The usual forms are flint flakes sometimes showing secondary chipping, pointed or pear-shaped implements having in typical specimens a rounded butt, a sharp edge at the sides, and a pointed end, and a variety of modifications of this form into what have been called shoe-shaped, discoidal, oval, and heart-shaped implements. None of them have notches, stems, or grooves. It has been suggested that many of them were used as hand-spades or dibbles in grubbing for esculent roots.

A typical station in the south of France, that of Moustier in the department of Dordogne, furnishes a higher class of implements than the valleys of the north, but still indicating that the device of joining point to shaft was not yet discovered, or at least that the point or stone head received no dressing with special adaptation to this purpose. Hence we include this epoch with those previous as that of simple implements.

At Moustier not only chipped hand-stones are found, but sharpened points (*pl.* I, *figs.* 8, 9), blades for cutting, punches, and especially an abundance of semicircular utensils of different sizes called "scrapers" (*pl.* I, *figs.* 10, 11), which are considered typical of this age. Their use is not positively known, but they must have had one of considerable interest to primitive man, as this is a form widely distributed over the earth's surface. Possibly they were used to skin and dress the animals captured in the chase.

The large quantities of flint chips and other *débris* left by the ancient artisans of this early age prove that the manufacture of their simple tools was an industry carried on with energy, and that they fully appreciated the advantages which even such rudimentary weapons gave them in the struggle for existence.

It is sometimes mentioned as a characteristic of the implements of this period that they are chipped or dressed on one side only, the other presenting the natural cleavage. As the latter is comparatively flat and the former rounded, such specimens are called "turtle-back celts," from some resemblance to the shape of a turtle. This form, however, is also

found in relics as late as the Neolithic Period, and therefore is not conclusive as to age.

Environment of Man during this Epoch.—As we have previously observed (p. 24), the climate of Western Europe during the early Quaternary was mild and equable. It was probably so over most of the globe on its land-area, which then was distributed in latitudes lower than at present, while the poles were surrounded by extensive oceans.

This softer temperature favored the comfort of an unprotected animal like man, but it also gave him as contemporaries those formidable Carnivora, the cave bear, the cave and sabre-toothed tiger, and the various hyenas which we described on page 24. Their remains are found in the same geologic strata as his simplest tools, and it is evident he had to contend with them for the mastery. The African and other species of elephant roamed as far north as the valley of the Thames, and the hippopotamus made its home in the tepid rivers.

But a progressive lowering of the temperature is apparent before this epoch closed. The mammoth and wall-nosed rhinoceros, protected from the cold by their heavy, hairy coats, wandered south-west from their former homes in the north-east. Various species of deer and elk, natives of colder climes, made their appearance; while before these new-comers the faunal types characteristic of warm climates withdrew or succumbed. If primitive man should be classed among these types, he alone not only survived, but increased in daring, skill, and numbers.

Earliest Social Conditions.—Without at all drawing upon the suggestions of fancy, we are able to picture in a general way what were the conditions of human life at this its very outset. Men congregated in bands and formed some sort of communities. This we know, because many of the early remains indicate centres of life, the places of residence not of scattered individuals, but of numbers at the same time. These communities were not migratory to any great degree, but were sedentary. This is shown by the fact that their tools are of the stones found in the immediate vicinity, and not of materials brought from other localities. By the same evidence there was little or no intercommunication between these communities, as there are no signs of exchange of materials or implements.

The position preferred for residence was upon watercourses, indicating that from these or from their valleys proceeded the principal food-supply. This consisted of fish, amphibious animals, wild fruits, edible grasses, and roots.

Negatively, nothing like a charm, amulet, or other religious emblem, and no relics of interment, have been discovered referable to this epoch; therefore it is probable that the sentiment of religion was not yet developed, for this finds its earliest and strongest expression in respect for the dead. As no implement suitable for skinning animals or dressing their hides has been found, it is inferred that clothing was unknown—a view to which the mildness of the climate adds probability. On the other hand,

even at that early date the love of personal decoration had been evoked. At least Dr. Rigollot maintained that various small heaps of naturally perforated shells, the *Coscinopora globularis*, which he found in the gravel-beds of Amiens, had been strung together and used as ornaments. The shell is a petrification found in the chalk-beds, from which Dr. Rigollot believed the ancient inhabitants collected them.

The conditions of a sparse population, isolated in small sedentary communities, separated by forests harboring ferocious Carnivora in abundance, against which they had no means of defence, will explain the extremely unprogressive character of this early race. For tens of thousands of years they appear to have dwelt in the same river-valleys without gaining one step in industrial development. Not until the growing acerbity of the climate forced them to adopt protection from its rigors and greater activity in the pursuit of food do visible signs of intellectual advancement manifest themselves. Thus, in the remains at Moustier we find scrapers and punches suitable for cleaning and fastening together the skins of animals, with which doubtless those early settlers protected themselves from the cold.

Living upon the rivers, it would seem likely that they had devised some means of water-transportation, perhaps rafts. This is indicated by the fact that many of their implements lie in the gravel-beds which then formed the bottom of the streams, and they must have been dropped in the positions in which they remain by some one moving on the water above, engaged in fishing or collecting floating materials.

Distribution of Relics of this Epoch in Europe.—The race in Europe at this epoch was by no means confined to England and France. Researches in the oldest quaternary strata have brought to light implements of the same patterns in districts widely asunder. One deposit was found in the gravels of the Rhone near Arles; a number have been unearthed in Italy as far south as Rome, but especially in the valleys of the river Po and Vibrata; the station of San Isidro near Madrid has yielded excellent specimens; the banks of the Meuse and Scheldt in Belgium have been quite rich in such finds; several valleys of Central Germany scarcely less so; while in Switzerland, so fertile a field for later Archæology, not a single station of this epoch has been reported. This is explained by the supposition that even in the comparatively mild temperature of the older Quaternary the mountain-region of Central Europe offered too inhospitable a climate for primitive man.

Relics of this Epoch in Africa and Asia.—Although the earliest tribes were little prone to roam, the enormous length of time which their period includes led to their dispersion over most of the then habitable globe. We have mentioned (p. 20) the probability that they wandered to America across the land-bridge then existing in the Northern Atlantic, and we can trace almost certain signs of their presence in Africa and Asia.

In the former continent the valley of the Nile was inhabited at an

indefinitely remote date by a race manufacturing stone implements nearly identical with those of the Drift and the Somme gravels. An able American archæologist, Professor Henry W. Haynes of Boston, has described and figured a number of these which he collected during a winter spent in Egypt. Several of the types which he gives we reproduce on Plate 1 (*figs.* 12-14).

In the far south, in the diamond diggings of the Cape of Good Hope, there have been disinterred at a depth of forty feet below the surface specimens of just such rude implements. There seems no question that they were deposited there at a period nearly coeval with the English Drift.

In Asia such finds have been reported especially from Syria and India. In a deposit of laterite not far from Madras a number of characteristic implements of the most ancient patterns have been collected by English explorers; while in the alluvial deposits of Narbada they have been found intimately associated with the bones of various animals now extinct in India.

Even so far to the east as Japan the recent researches of Siebold and Morse leave no doubt that at an extremely remote date that archipelago was inhabited by men who had not learned the art of making lance-heads or arrow-points, not even a scraper or a stone knife, and who were therefore wholly within the epoch of simple implements. Whether we could with propriety assign these tribes an antiquity so great as those of the Somme gravels is as yet uncertain, but their state of culture was the same. Some specimens of their workmanship are presented on Plate 1 (*figs.* 19, 20).

B. EPOCH OF COMPOUND IMPLEMENTS.

Climate.—During this epoch the Glacial or Ice Age in Europe reached its maximum. The temperature of France, Belgium, England, and Germany was at times intensely cold. But it is probable that at various periods the ice sheet receded for a time, thus allowing the plains to regain a temporary fertility.

Animals.—This was the period of the mammoth and the reindeer, of the glutton, the lemming, and the pouched marmot, all of them animals suited in tastes and habits for cold countries, and now occurring far to the north of the localities named.

Cave-dwellings.—Characteristic of this epoch are the relics derived from the caves. These natural shelters do not appear to have been inhabited to any extended degree by man in the former epoch. Probably they then served as the lairs of wild beasts, and moreover a milder climate did not oblige men to seek shelter from the elements.

These caves are found in abundance in the secondary limestone which crops out in Southern England, Central and Southern France, Southern Belgium, and various parts of Germany and Italy. From all these localities numerous remains of man and his handiwork have been

exhumed in original connection with the bones of the now-extinct animals above mentioned.

For archæological purposes the caves have been divided into caverns, which are caves of considerable length with several corridors and floors; grottos, which have but a single chamber; and rock-shelters, which are open spaces protected by an overhanging ledge of rocks.

It would be tedious to enumerate even the more celebrated of these, so great a number have yielded valuable material; but as examples of the more fruitful we may name Kent's Hole and the Brixham Cavern, both near Torquay, England; the cavern of Furfooz and the Hole of La Naulette in Belgium; those of La Madeleine and Cro-Magnon, both in the department of Dordogne, France; and in Germany the Hohlefels and the Schipka Cave.

We need not suppose that these caves were exclusively, or even largely, the dwellings of the people who lived there during this epoch; but that the caves were occupied then, and not previously, indicates the presence of inhabitants of different tastes and habits from their predecessors.

Character of Relics.—This difference is also brought into strong relief by the contrast in the art-products of the two races. The epoch begins with the dressing of stones to serve as compound implements; for example, to be attached to the extremity of a spear, javelin, or arrow, or grooved so as to be tied with thongs to the end of a handle, thus greatly increasing their effectiveness. Flint darts with stems and barbs first appear, and those odd shapes which the French archæologists call *pointes à cran* (*pl. 1, fig. 7*). The manipulation of stone by chipping reached its highest point, but the art of polishing it remained unknown. Bone, which had been scarcely or not at all employed by earlier artisans, now came into extensive use, and, especially toward the close of the epoch, supplanted stone for many industrial applications. Pottery remained entirely unknown, and no implements indicating the prosecution of agriculture have been discovered.

A large number of typical examples of the art of this epoch were exhumed at Schussenried, near Ravensburg, in the Black Forest, Southern Germany, in the year 1865. They are represented on Plate 2 (*figs. 1-11*). These objects were found beneath a massive deposit of peat and calcareous tufa, on the surface of the earth laid bare as it was at the time of the Glacial Epoch; this surface was covered with reindeer moss; and here also were found the bones of northern beasts of prey, such as the gold fox and ice fox, also numerous skeletons of the reindeer and portions of its antlers, as well as bones of the singing swan, which at this day breeds in Lapland and Spitzbergen.

The special uses of these instruments cannot be fully determined. Figure 2 is a fish-hook with the back prong broken off; Figure 3 appears to have been used as a ladle, perhaps to scoop out the warm brain-matter from the skulls of slaughtered game. Of this some indication is afforded

by the fact that almost without exception the frontal bone of the skulls discovered is broken out. In Figure 5 a needle for sewing furs may without difficulty be recognized. Figure 6 we may assume was a spear-head, to which, as in Figure 8, a point was fastened with a sinew. The indentations on the upper flattened end are still plainly to be seen. Figure 10 is an antler-prong whose inner side is hollowed out for the fabrication of other instruments.

We must conceive man of the Glacial Epoch as subsisting only upon the products of fishing and of the chase, and upon native roots and fruits. The reindeer was not yet tamed and domesticated; at least, this would seem to be indicated by the absence of all remains of the dog, without which, it is well known, no herd of these animals could be kept. The possession of flint, which material is not indigenous to the Black Forest, affords evidence that the horde of hunters either made wide excursions, though at times finding quarters in caves, or had learned to supply their necessities by some kind of barter (comp. pp. 30, 74).

That they utilized fire is manifest from discoveries of charcoal in other localities. Here and there we come upon the remains of banquets which bear evidences of extensive encampments. Among these remains opened marrow-bones from which the marrow had been extracted are particularly noticeable, and almost always the bone-splitting instruments, consisting of the lower jaws of larger animals, were to be found near by. In a cave near Chauvaux in Belgium human bones thus opened were likewise found, and it would appear from this that cannibalism was practised by this ancient race, though to what extent remains uncertain. The skulls shown in Figures 74 and 75, which are derived from the grotto of Furfooz, Belgium, and which undoubtedly belong to the Glacial Epoch, being found in common with the bones of the reindeer and other animals of that period, indicate in their low forehead and strongly-developed organs of mastication a very crude stage of development, far removed from the ape skull though they may be.

Remarkably enough, however, there appear to have come down to us from this epoch productions which in the true sense of the word are works of art; and should these prove to be genuine—as indeed they are accepted by our most widely recognized authorities—no further evidence would be needed that in the earliest specimens of our race with which we have become acquainted we are dealing with man in the highest significance of the term, and not merely with an advanced development of some brute creation. In the caves of Périgord, as also in the bone-heaps of La Madeleine near Turzac, France, there were found a number of fragments on which were rudely yet unmistakably engraved figures of the mammoth and of various other animals of that period. Among those found near Turzac was that illustrated in Figure 11, showing two reindeer, one following the other. Another bone fragment, discovered near Schussenried, upon the surface of which smaller tracings were repeated, might well serve as confirmatory evidence of the date of the former.

From other deposits of the same period implements of a wedge or chisel shape are derived (*figs.* 16-18), unworked fragments and splinters of flint (*figs.* 14, 15), and with these long, double-edged pieces almost in the shape of knives, as shown in Figure 28.

Remains of Man.—The remains of man himself dating from this epoch are extremely scarce, as we might readily suppose. An organic substance like bone has less chance of survival than solid stone. Yet some anthropologists refer to this age certain skulls found in the Lake of Neuchâtel and in the Upper Rhone valley near Sion. It is claimed that these specimens exhibit a gradual recession of the organs of mastication and a growing prominence of the forehead and brain-cavities, which place them in favorable contrast with those earlier and more brutal forms which have been figured in the last volume as probably the most ancient of the human race (see Vol. I. p. 38, and *pl.* 2). The skulls from Switzerland to which we refer are shown on Plate 2 (*figs.* 76-78); they were found under circumstances, however, which by some authorities would assign them to the Neolithic rather than the Palæolithic Period, and they cannot be accepted without reserve as of the older date.

II. NEOLITHIC PERIOD.

New Technical Processes of the Neolithic Period.—On an earlier page (30) the flaking and chipping of stone have been described—methods which were the only ones known to pristine man. With the introduction of the Neolithic Period a variety of novel technical procedures for managing this refractory substance were invented, the results of which must the more closely attract our attention as they are the distinguishing traits of the period in both hemispheres. These new methods were those of boring or drilling, of pecking, of polishing, and of grinding stone.

Boring or Drilling.—At first sight it seems very remarkable that in so ignorant a condition as savage life the art of perforating even the hardest stones should be quite familiar. But, in fact, given an indefinite amount of patience, and it is nowise difficult. The method generally employed both in ancient Europe and throughout America was to take a hollow reed, and, fixing it firmly against the stone to be operated on, revolve it rapidly in the hand, moistening the surface of the stone and throwing upon it some sharp siliceous sand. Some reeds have so much silex in their tissues that even without the sand they will make an impression on stone. By this process a circular excavation was in time produced, in the midst of which was a cylindrical core. This was broken off from time to time, and a perforation with symmetrical sides and of equal calibre resulted. At other times a pointed stick was revolved against the stone, water and sand being employed in a similar manner, until the desired excavation was produced. Specimens showing these two primitive methods of boring are easily distinguishable, as the former leaves a perforation of equal calibre throughout, while the latter shows a gradually decreasing diameter of the channel. In the more advanced nations the labor of this process was

greatly lightened by the employment of the bow, with which the reed or drill could be revolved with great rapidity. (Comp. p. 43 and Vol. I. p. 97.)

Pecking.—By this is meant the dressing of stone by repeated light blows with a sharp-pointed instrument held nearly perpendicularly to the plane of the surface. When metals were not known a hard and pointed stone was the tool adopted, which in a practised hand shapes a softer stone with surprising rapidity. In this manner the grooves around stone axes and mauls were first chipped out. Many of these pecking-stones are merely triangular or sharp-pointed pebbles, but the peculiar marks of wear on their edges disclose the use to which they were put. They were not fastened to handles, but were held in the hand. On not a few of them we find "finger-pits," which are shallow artificial depressions on opposite sides of the stone to receive the extremities of the thumb and second finger, the first finger being placed upon the superior edge of the tool to direct the blows more accurately. Instruments answering this description are found in the vicinity of most of the sites of workshops of the Neolithic Age in both hemispheres.

Polishing.—The Neolithic Period is often called "The Age of Polished Stone," this method of finishing being taken as distinctive, though it is not more so than the other technical methods we are describing. The polishing was secured by applying the principle of attrition. One stone was rubbed against another until all the marks of chipping and pecking were worn away. This could be accomplished, in a measure, by any hard and gritty stone, but the artists of the later Stone Age were select in their tools. They sought out and preserved stones of a particular grain and degree of hardness, and dressed them carefully into the most effective shapes for the purpose to which they were to be applied. Such specimens have long, slender, polished surfaces of regular contour and with a fine, sharp texture. By some antiquaries a relic of this kind is called a "whet-stone," on account of its resemblance to that implement (*pl. 2, fig. 38*).

Grinding.—Finally, the grinding or preparation of the edges of the polished stone implements was effected by long scouring with stones prepared for the purpose. These do not appear to be the same as those for polishing, but are more globular in shape, and often have the "finger-pits" above spoken of on their sides. They were revolved with a circular motion along the edges of the instrument and wore it down to a cutting border.

Abrupt Beginning of the Neolithic Period.—Archæologists both in Great Britain and on the continent of Europe have noted a wide gap between the close of the Palæolithic and the beginning of the Neolithic Age. There are indications of a long term of time in which numerous geological strata were deposited which contain no human remains. The climate underwent marked changes, passing from an arctic condition almost to that with which we are now familiar. The mammoth, the reindeer, the hyena, and the great felines disappeared, never to return.

Men of the Neolithic Period.—With the beginning of the Neolithic Period we find ourselves brought abruptly into the presence of a race of

men with totally new arts and novel habits of social life. They are acquainted with the manufacture of pottery, and although their implements are still of bone and stone, they know how to polish and bore these materials, grinding their surfaces and perforating them. More than this, they are agriculturists as well as hunters and fishermen, and they have with them domestic animals, the horse, the dog, and perhaps the hog. They live no longer in caves or bark cabins, but in villages of felled logs, often built on piles in lakes or rivers for greater security, and they have the ability to move and set upright huge stones, singly or in rows, or in the shape of tables, one resting horizontally on others disposed vertically.

All this proves an enormous advance in the arts and in social organization. Are we to regard the neolithic tribes as the descendants of those cave-dwellers whom we last saw occupying the same territory? If so, where are the evidences of the intervening stages of culture? Or are we to hold that neolithic man entered Western Europe from some Eastern home where he had slowly developed these arts? If that was the case, where was his former home and what became of the race of cave men? To these queries the science of Archæology offers as yet no satisfactory replies. Perhaps the opinion of Professor Dawkins is as good as another. He thinks that the cave man of the late palæolithic time was the ancestor of the modern Eskimo, and that when the ice-sheet receded to the far North, he went with it, migrating to the Arctic Circle along with his indispensable ally, the reindeer. As for neolithic man, he came from Central or Western Asia, bringing with him the arts and the cereals of that distant clime. Passing from this region of surmise, let us examine the arts of this period.

A. EPOCH OF MEGALITHIC CONSTRUCTIONS AND KITCHEN-MIDDENS.

Megalithic Monuments.—Antiquaries are now inclined to refer to the commencement of the Neolithic Period certain structures of immense blocks of unhewn stones which occur abundantly in Western Europe. These are the *menhirs* (*men*, stone, and *hir*, high), single stones set up on end; the *cromlechs* (*crum* or *crom*, crooked or curved, and *llech*, a stone), rows of such stones, either in parallel lines or arranged to enclose a circular space; and the *dolmens* (*daul*, a table, and *men* or *maen*, a stone), where a large flat stone is imposed on others to form a covered chamber.

These names are Celtic, and for a long time it was customary to call these erections Celtic or Druidic monuments, on the supposition that they were erected by the Celts or by their priests, the Druids. But it has been pointed out that these monuments are found in great numbers where the Celts did not penetrate, as in Spain, Portugal, Algiers, and Morocco. Hence it has been maintained, on seemingly good ground, that the Druids merely named and used them, but that their construction was due to some earlier people.

Menhirs, Cromlechs, and Dolmens.—The purpose of the menhirs or

"bauta stones," as they are sometimes called, is not clear. They were not tombs, as no osseous remains are found associated with them. Probably they were intended as monuments and memorials in honor of the dead, or to record some important transaction. The parallel and circular rows of such stones known as *cromlechs*, of which an illustration is given on Plate 3 (*fig. 4*), were probably holy places of some kind, either civil or religious. The *dolmens* were undoubtedly burial-chambers; and in explanation of them we may say a few words on the early methods of disposing of the dead.

Disposal of the Dead.—No evidences have been discovered that there were tombs or burials before the epoch of which we are speaking. Palæolithic man probably cast the dead body into a stream or left it to be devoured by beasts. But the race that succeeded him appears to have paid extraordinary honors to the dead body.

Two modes of interment may be distinguished in the Neolithic Age—one beneath and the other above the earth's surface, though the use of the different modes was probably caused only by accidental circumstances or by local custom. Whether practical considerations or instinctive sentiment moved man to consign his dead to earth, the subterranean method of interment is certainly the earlier; the other method could have been suggested only after he had become accustomed to erect memorials over the graves. The corpse was put into the ground, in either a lying or a squatting position, and all the valuables it possessed in life were placed with it. Of this kind are the tombs of the burial-field of Hinkelstein and many others. Sometimes the walls of the vaults (*pl. 3, fig. 5*) were lined with stones or divided into larger recesses for several persons, so that an apparently systematic arrangement was formed. Large flagstones were placed over the vaults. The first monument consisted of a simple earth-mound. To this class belong the dolmens, or *giant chambers* (*fig. 6*), which are often supplied with a stone passage running to the edge of the hill. The vaults were also erected above the ground, and for this purpose granite blocks were used. A number were placed around a square or circular space measuring from ten to twenty feet, and supported over it one or more flat roof-stones, generally of colossal dimensions. The floor was paved with sandstone or covered with flints; the inner sides of the recess were sometimes carefully smoothed, and the cracks between the blocks filled with small stones and plastered with clay. Many of these monuments are still found covered with soil; in others the stones project freely from the ground (*figs. 1-3*). Whether they also were once covered with mounds is uncertain. The corpses seem to have been seldom cremated, though sometimes their ashes are found in urns.

Kitchen-middens.—Many of the neolithic tribes lived along the coast of the sea, supporting themselves upon its finny inhabitants and various shellfish. The refuse of such communities by gradual accumulation rose to the size of a small mound, enclosing within it numerous objects illustrating the stage of culture of the tribe. Such are the *kjoekken-moeddings* (Dan. *kjoekken*, kitchen, and *moedding*, heap of refuse), or "kitchen-

middens," found in considerable numbers along the shores of Denmark, where they have been carefully investigated by Professor Worsaae and others. In the midst of these mounds, which are composed principally of shells of the oyster and the mussel, there occur fragments of charcoal, broken bones of animals, bits of rude pottery, and implements of bone and stone. The absence of metals from the older examples, the presence of pottery, and the character of the stone tools, justify us in referring these mounds to the early portion of the Neolithic Period.

They belonged, however, to a people rude even for that time. Polished stone is rare; there is no trace of agriculture, and there are bones of no domestic animal except the dog. Some of the shellfish represented are no longer living in that region, and others have lost important characteristics present in their congeners in the middens.

Industrial Art of this Epoch.—We have said (p. 41) that the first specimens of pottery date from the inception of the Neolithic Period. The primitive method of manufacture was to plaster clay over baskets or gourds, and expose these to the sun or fire. Later, the vessels were moulded by the free hand, and artistic designs were impressed on the moist clay. By comparing the earlier with the later forms of the ceramic productions of this epoch considerable improvement becomes apparent, which is illustrated in the specimens on Plate 2. The clay is generally mixed with coarse quartz sand. In Figures 58–60, which, like Figure 61, represent objects found in the Lake of Neuchâtel in Switzerland, we recognize the rude beginnings of the earthenware industry, and we see its fullest development in Figures 62–69, the last two of which were taken from excavations at Hinkelstein in Rhenish Hesse. The large vessel (*fig. 60*) shows at its lower edge impressions of delicate fingers, from which we may infer that the fabrication of pottery devolved on the women. The vessel shown in Figure 61 has a lid and a rudimentary ornamentation of incised parallel lines, which in the following figures develop into noteworthy decorations. On the fragment of an urn (*fig. 70*) a kind of foliated decoration is shown.

Utensils in bone and stone indicated not merely a marked improvement over those of the preceding epoch, but the introduction of new technical procedures. The broad end of the wedges was sharpened by grinding (*figs. 19–21*). The whetstones (*fig. 38*) used for the purpose are still found in abundance. Hammers and axes to which a suitable shape was given (*fig. 32*) were developed from the wedges, and, to facilitate their use, they were tightly bound into the cleft end of a wooden handle. As they were liable to become loose under the strain of heavy blows, the stone head was grooved (*fig. 24*) where it was fastened into the handle.

It may be assumed that the invention of boring (*figs. 22, 23*) introduced a new epoch. Interesting finds in which the hole is only partly made indicate that the work was effected by means of grinding with a hollow staff, sand being strewn in. Thus, with infinite pains, circular holes were bored through the stone, out of which a solid cylindrical piece dropped at the conclusion of the work. Men gradually progressed in

practical skill, as is shown by Figures 33-37, which doubtless belong to the end of this period. The improvement of the tools multiplied their uses; Figures 25-27 show grooved stone chisels, which imply a use beyond the needs of a wild hunting life. Special skill was acquired in chipping from the flint rocks splinters which were made into saws, scraping-knives (*figs.* 30, 31), sickles (*fig.* 29), and arrow- and spear-points (*figs.* 39-46), some of which present a quite graceful appearance. The curved knife (*fig.* 47) shows the continued development of this art. There are other remains whose purpose cannot be determined with certainty. Many of them exhibit indications of use as sling-stones, as weights for fishing-nets, and perhaps as spinning-bobbins, articles of decoration, etc.

The degree to which ornamentation of articles in common use was carried is indicated by Figures 48 and 54, which represent a piece of deer's horn and a cylinder of bone decorated with small concentric circles and rings. At Schussenried there were found small bits of red paste, which was composed of oxide of iron, and was probably used to paint the body. Necklaces of clay beads are not uncommon. Figure 71, dug up at Hinkelstein, illustrates a necklace made of teeth and a claw.

Side by side with the employment of stone, the use of horn and bone (*figs.* 48-57) maintained its place. Figure 51 shows a prong of deer's horn shaped into a hollow chisel; Figures 52 and 53 are bone arrow-points; Figure 57 is a whalebone axe; and in Figures 55 and 56 we find a pair of combs. Without doubt, wooden tools were also used, but their perishable material has not survived the lapse of time.

B. EPOCH OF EARLY LAKE-DWELLINGS.

Discovery of Lacustrine Remains.—In the winter of 1853-54 a discovery was made in the Lake of Zurich, Switzerland, which opened a new and rich field to archæological investigation. The waters of the lake being unusually low, some of the residents of the banks began excavating the rich mould from the bottom. They soon came upon numerous remains of broken pottery, stone implements, dressed horns, and especially the broken remnants of trunks of trees which had been driven into the bottom to serve as piles. The discovery was reported to Dr. Ferdinand Keller, president of the Antiquarian Society of Zurich, who immediately repaired to the spot and began a series of careful investigations. The results were as unexpected as they were interesting. It was ascertained that the remains discovered marked the site of an ancient village, the houses of which had been built upon piles supporting a large platform in the lake at a distance from the shore, with which it had been connected by a bridge which could be removed at pleasure. The purpose of this arrangement was to secure protection from the wild beasts which then roamed the forests, or from yet more redoubtable human enemies.

Robenhausen.—Among all the instruments found there were none of metal, hence the age of this construction was clearly assignable to the Neolithic Period. This was also true of another and much larger con-

struction which was exhumed a few years later not far from the same spot, on the borders of the little lake Pfäffikon, Canton Zurich, close to the village of Robenhausen. This has yielded such an abundance of typical specimens of the older forms of these lake-dwellings that by some antiquaries the division of the Stone Age to which it is assigned is called "The Epoch of Robenhausen."

Other Discoveries.—Other similar discoveries rapidly followed the one first named. It was found that not only in the Lake of Zurich, but in almost all the Swiss lakes, there were hidden many such sites of ancient lake-villages. By the year 1879 one hundred and sixty-one such localities had been mapped and described, and since then every year has added to their number. Observers beyond the limits of Switzerland were stimulated to prosecute researches in localities offering the probability of such finds. The results were surprisingly successful. Italian explorers disinterred the remains of many such in the valley of the river Vibrata in the Abruzzi and in the fertile alluvial plain on either bank of the Po; while similar sites have been discovered in the lakes of Lombardy, in various portions of Bavaria and Southern Germany, on the rivers of Central France, in Savoy, and as far south as the foot of the Pyrenees.

Age of the Lake-dwellings.—Although those first discovered belonged distinctly to the Neolithic Period, the investigations which followed proved that all the remains could not be attributed to that date. At some stations there are abundant evidences that the villagers were well acquainted with the use of bronze, and preferred it to stone for the manufacture of tools and weapons. Even some specimens of prehistoric iron utensils have been reported. Moreover, the general character of the remains of different villages when compared indicated a progressive development of the arts of life, proving that the lake-dwellings were constructed by many generations, extending in time from the early Neolithic Period down to the dawn of history. They come even within the ken of history, for Herodotus mentions a tribe in Thrace, the Pæonians, who in his day lived upon Lake Prasias in dwellings erected on platforms which were supported by piles and connected with the land by a narrow bridge. He adds that there was a hut for each family, and that the small children were tethered by a rope lest they should fall into the water. Just such a mode of life must have been that of the ancient Helvetians. That even this laborious method of construction did not always protect them from their enemies is apparent from the manifest evidence in many instances that these villages came to a violent end by fire, not allowing the inhabitants time to remove their most valued effects, though of course such wooden constructions were liable to this catastrophe by accident as well as from assault.

The general terms for these structures are "lake-dwellings," "lacustrine habitations," "pile-dwellings," or, using a convenient word derived from the Italian, *palefittes*. The principles of their architecture are well displayed on Plate 4. Figure 1 is an ideal restoration of an ancient

palefittes, showing how it must have appeared when inhabited. The boat in the foreground is of the model of those found in the remains. Some of the houses on the platform were circular, others square, as represented. They were of wattled poles or of split boards. Figures 2 and 3 indicate how the piles were driven into the bottom of the lake when this was soft enough to admit them. When this was not the case, the ingenious device was adopted which we see represented in Figure 4; the piles were placed upright, and stones were banked around them sufficient to keep them in a firm position.

It is evident from a study of the remains of these villages, and of the objects of art which have been rescued from the lake-bottoms, that the builders of the palefittes were, even in the earliest times, a people of sedentary habits, with established governments, laws, and religions, largely agricultural, carrying on a commerce with distant points, and advancing with positive strides toward civilization. They possessed domestic animals, such as cows, sheep, and dogs, though of different breeds from those known to us. Of their cultivated plants several specimens are given. The two- and six-rowed barley is shown in Figure 58, and flax in Figure 55. Wheat was also cultivated, and from the roughly-ground flour of barley and wheat a coarse bread was made, some fragments of which have lasted to this day. One such (*fig.* 57) is not unlike the "pumpernickel" still in favor in some parts of Germany.

From the flax they made a plaited stuff (*figs.* 54, 90) which took the place of woven goods. For winter food they stored away wild apples and pears, which are found cut in halves, but not peeled; also hazelnuts (*fig.* 56) and cherries, of which the stones (*fig.* 59) have been preserved. We again find stone implements (*figs.* 5-32), but they are better made and more various than those of an older epoch. Particularly interesting are the finds which often occur in connection with the older forms; thus, the stone wedge is inserted into the deer's horn (*figs.* 34, 66-68, 70) or into a wooden shank (*figs.* 69, 71-73), and these are sometimes supplied with handles (*fig.* 71); the flint knives have wooden handles (*fig.* 80) which extend along the back. Figure 85 shows a hoe, the stone blade being tied to the handle.

The improvement is still more apparent in articles made of bone and horn, among which we may distinguish fine ornamental needles (*fig.* 82), shuttles (*figs.* 77, 78) with one or two holes, arrow- and harpoon-points (*figs.* 81, 89), saw-like implements (*figs.* 74, 75), and simple awls and gouges (*figs.* 35, 37-49, 64). There are found, as in earlier times, large and small beads of clay (*figs.* 60, 61, 84, 87), and weights for nets (*fig.* 63). Among the earthen vessels, which in very simple shape the Lake of Constance still furnishes (*figs.* 50-53), those from the palefittes of Lake Fimona near Vicenza are especially remarkable (*figs.* 91-95). The shape and decoration of the handles, as well as some of the vessels themselves, so vividly recall the later Etruscan bronze productions that one is involuntarily led to believe in some relation between the two. Wood, espe-

cially oak, has been fairly preserved where it has always remained under water. We show on the Plate a twirling-stick (*fig.* 86) from the pile-structures of Robenhausen (Switzerland), and a club and bow (*figs.* 62, 65) from those of Wangen on the north side of the Lake of Constance. We can understand how all these things, even fruit, flax, etc., have been preserved by considering that at the destruction of the villages by fire they had been charred, and, falling into the water in that condition, were able to defy decay.

Since a people with fixed habitat cannot exist without social forms, the lake-villages mark an important advance in human civilization, although we cannot imagine what sort of social constitution they had, or even how far they formed a common league—whether they united as neighbors, families, tribes, or even as races. In Europe there have been found tools made of nephrite or jade, a species of stone which is native only in the eastern parts of Asia—a fact which indicates that peaceful intercommunication was widespread in the then inhabited regions of the globe.

II. THE AGE OF BRONZE.

Date and Subdivisions.—The advent of the Age of Bronze in Europe has been traced in Volume I. (pp. 171, 172). It may be roughly said to have been from two to three thousand years before the Christian era. Without resuming the chronological considerations already discussed, we shall confine ourselves here to a characterization of the culture of that period. It may be divided into an earlier and a later. The former is represented by the later lacustrine villages, which, as we have seen, display the gradual and almost uninterrupted progress of man from the use of stone to that of metal. The latter is best shown by the bronze relics from Northern Germany, England, and Scandinavia.

Characteristics.—The Age of Bronze was distinguished not merely by the introduction of a far better material to which man could apply his industrial skill, but by a marked improvement throughout all art, extending both to design and technical execution. The older materials were retained, but they were manipulated with greater intelligence and a truer appreciation of symmetry and finish. This general improvement will be readily seen by examining Plate 5. It represents, besides a multitude of skilfully-worked bronze objects, stone implements (*figs.* 1-4) of admirable workmanship. The earthen vessels alone experienced no real advancement, as is shown by their shapes in Figures 54, 58, and 59. It seems as though it were not deemed worth while to employ higher skill upon such inferior material. An etched Runic inscription on Figure 59 shows that it had come from a German hand; and the rude attempt to form a face on Figure 58 is proof that it belongs to a comparatively late period. Both of these remarkable urns, found near the shore of the Baltic, are now in the museum of Dantzig. The pottery-working of the North progressed no further until the influence of the Romans affected it.

The most numerous and also the earliest bronze articles are the so-

called "celts," wedge-shaped instruments of percussion manifestly modelled after the stone wedges. They are sometimes narrow and shaped like chisels, and sometimes enlarged into small axes, but they always possess the advantages which metal gives, especially as regards the joining and insertion of the handle. The groove was somewhat deepened on both flat sides (*figs.* 7, 8), in order to attach the wooden clamp more securely; and its projecting edges were gradually enlarged and bent until they formed perfect loops (*fig.* 11) for the reception of the cleft handle. At length some one conceived the idea of casting a real shaft-hole, and of adding a loop (*figs.* 12, 13) on the side in order to bind the metal and wood more tightly by means of cords. The handle was straight or knee-shaped, long or short, according to the purpose of the implement, which, by the way, served as well for the uses of peace as for those of war.

After the implements for striking, those for cutting are to be considered—sickles (*fig.* 16), knives (*figs.* 17–19), saws (*fig.* 20), etc. Also awls (*fig.* 21), needles (*fig.* 22), fish-hooks (*fig.* 23), and other small articles were skilfully made. Sickles occur more frequently than knives; they are generally crescent-shaped or have rounded corners, and often the edge projects downward from the surface, in which form they probably served as scraping-knives for the preparation of hides. As regards the knives, it is remarkable that, though comparatively small and generally dull, they have in the curved blade a power which a straight blade could not give, because the direction of the stroke effects as much as the force exerted. The same principle was applied to the blades of the swords, which have the shape of a willow-leaf. Their length in the earlier times seldom exceeded half a metre (nearly 20 inches). The small handles without cross-bars, sometimes made entirely of bronze, sometimes faced with wood, are particularly noteworthy, as, being much too short for us, they indicate a race with delicate hands. The forms exhibited in Figures 32 and 33 are elegant, and certainly belong to the end of this period. Daggers (*figs.* 26–31) are also found, shorter than the swords and generally with a straight blade, but in other respects they are like the swords. Arrow- and spear-points (*figs.* 24, 25), are more numerous than the swords and daggers, which must have been regarded as great treasures, but which are very different in form, size, and perfection of workmanship from those of the Middle Ages. The spear-points were probably used chiefly for javelins. The battle-axes (*figs.* 14, 15), shields, helmets, and war-trumpets, of which rare examples are found, always profusely decorated, hardly show the characteristics of this period; for, though they belong to a people who used bronze exclusively, they doubtless must have originated in lands which had already reached the civilization of the Iron Age. The number of ornamental objects is infinite, and among them the brooches or breastpins (*figs.* 41–43) form a larger and more varied section than any other. Besides these there are found necklaces, bracelets, and anklets (*figs.* 44–51), hair-pins (*figs.* 36, 37), ear-rings, diadems (*figs.* 38–40,) pendants, and other trinkets. A kind of pinchers with broad tongues

(fig. 52) deserve special notice; they are found frequently, and almost always in proximity with jewelry, whence the opinion that they belong to the articles of the toilet. Only the simplest forms have an interest for us, as bronze ornaments continued to be used during the Middle Ages, and it may be supposed that all compound forms originated at a late period. The vessels bear, almost without exception, the marks of Etruscan art, and we shall return to them in the dissertation on the Etrurians (p. 200). Among the most ancient bronzes may be numbered those which, like the earthen urns, are decorated with straight or curved lines (fig. 46), to which are added dots in form of buttons in relief. Ornamental reliefs, and even figured representations, either belong to the end of the period, or must be included in the category just mentioned. Gold (figs. 56, 57) was used at an early period, and silver later. The large surfaces of the shields (fig. 34), and especially the boss in the centre and the spikes (fig. 35), gave wide scope for the ornamental lines peculiar to this period. Glittering like gold when in use, the bronze utensils, from lying in the ground, have almost all assumed the so-called *œrugo nobilis*.

This general description of the character of antiquities in bronze dating from a period anterior to the introduction of iron will illustrate the rapid and marked advance which characterized that age. Antiquarians have divided it, as it existed on the continent of Europe, into two epochs, which, however, are distinguished geographically rather than chronologically, the one embracing the relics of the lacustrine habitations, the other those obtained in the tumuli and other burial-places of the more northern tribes.

A. EPOCH OF LATER LAKE-DWELLINGS.

The Swiss palefittes, which belong exclusively to the Age of Stone, occur principally in Eastern Switzerland. As we advance to the west, and especially as we enter Savoy, we discover more and more frequent specimens of work in bronze. Many of these are similar to those above described, while others reveal local peculiarities of workmanship and are found in unusual abundance.

Of larger utensils, celts with sockets are frequent, as well as that particular variety known to antiquaries as *palstaves*. These, as defined by Professor Daniel Wilson, are "wedges, more or less axe-shaped, having a groove on each side terminating in a stop-ridge, and with lateral flanges destined to secure a hold on the handle."

Bronze sickles are abundant in many of the later lacustrine stations. They indicate that the people who manufactured them were accustomed to sow and reap grain-fields of respectable size, and probably that they harvested and preserved the straw as well as the grain.

Of lesser articles we may note the curious bronze pins with flat heads, some specimens of which are neatly decorated with inlaid tin; and awls of the same material, several of which have been exhumed still fastened to their original wooden handles or to hafts of stag-horns.

B. EPOCH OF MOUND-BURIALS.

We have seen (p. 42) that during the Palæolithic Period man appears to have paid no honors whatever to the dead; and that in the Neolithic Period he collected the bodies or bones of the departed and deposited them in rude but massive sarcophagi at the cost of what must have been to him excessive toil. During the Bronze Age the huge stone tombs disappeared and were succeeded by mounds. The cremation of corpses prevailed, though in some grave-mounds skeletons are found buried by the side of the cremated dead.

The monuments consisted either of bare heaps of earth (*pl.* 3, *fig.* 9) or of mounds surrounded by stones (*fig.* 10). Both kinds are found in most countries of Europe, as also in those of Asia. Urns and metal utensils are found buried with the dead. The corpse lies either on the natural surface or is interred in the ground—merely covered with sand or fenced in with stones. A layer of stone (*figs.* 11, 12) is usually found at some height above the bodies, and sometimes this layer is formed into a complete stone chest (*fig.* 13), out of which regular vaults, and finally sarcophagi, were developed. In Scandinavia and Jutland some of the vaults were made of wood. Urns containing the ashes of the dead are usually preserved in these different graves, but the ashes were not always gathered into vessels. The dampness of the soil may have caused corpses or urns to be interred above the surface, as is shown in Figures 7 and 14. In an urn mound near Uelzen a terrace-shaped arrangement was found (*fig.* 15). Figure 8 represents the section of a mound opened near Schwann in Mecklenburg. In it was found a paved vault containing a recumbent skeleton, with pieces of a broken bronze sword at its side. In a recess beneath the pavement there were eight skeletons in squatting posture, and another skeleton, apparently of a female. These latter were probably slaves who had been sacrificed at their master's grave. To this day the mound is called the Herrberg. The urn in its upper layer of earth was deposited later, and evidently belongs to another interment.

Subterranean interment (*fig.* 16) prevailed also during the Iron Age, which in this respect is not sharply divided from the Bronze Age. Mounds were not the only honors bestowed on the dead; sacrifices especially were offered, though they did not always involve human lives.

Sacrifices of this nature, and also the custom of burning the bodies of the dead, continued to prevail down to the times of the early German emperors, who forbade them. The custom of burial-gifts was retained for a long time, and they are found in late stone and wooden coffins (*figs.* 17, 18). The wooden coffins were generally hollowed trunks of trees, the so-called "trees of the dead." Figure 19 shows one from an Alemannic graveyard near Oberflacht in Swabia. We may here remark that far into the Middle Ages wooden coffins were used only by wealthy people; others were buried simply wrapped in linen.

III. THE AGE OF IRON.

Date of Commencement.—In Volume I. (p. 173) we have seen that the beginning of the Age of Iron in Europe was prehistoric, although it cannot be placed many centuries before the existence of written records. Some antiquaries, indeed, have argued that as iron is a simple metal, while bronze is a compound of two metals, one of which, tin, is quite rare, the knowledge of iron must have preceded that of bronze. They explain the absence of implements of iron in the more ancient deposits by its much greater readiness to oxidize and thus to disappear.

This plausible reasoning has, however, been controverted by Professor Rolleston and others, who have pointed out that iron buried in the soil becomes not infrequently encrusted by carbonate of lime, and is thus protected for an indefinite period from the results of oxidation. The iron weapons taken from the Saxon cemeteries are often in almost perfect preservation, and whole hoards of iron tools, scarcely injured by the rust of nearly two thousand years, have been exhumed from the still older sites of Roman occupation in Britain. Beyond this, again, in graves of the later Bronze Period, such as those at Hallstadt referred to on page 52, occasional iron tools or weapons occur which are as well preserved as the bronze itself. We may be sure, therefore, that had the Iron Age preceded, or even been coeval with, the Age of Bronze, we should have discovered ample testimony to the fact.

Relics.—Specimens and hoards of prehistoric iron implements have been exhumed of recent years at Meisdorf in Hanover, at Bohlsten in the Hartz Mountains, at Graudenz on the Vistula in West Prussia, and elsewhere in Germany, as well as in Denmark and Southern Russia. These finds disclose the character of the culture of the period. The articles unearthed were in a fair state of preservation, sufficient to enable one to recognize their uses. Among them were points for spears, lances, and javelins, but arrow-heads were absent or scarce; swords of the shape of those of bronze were common; knives with blades curved in a semi-lunar contour, such as are now used for cutting leather and probably intended for this purpose, were preserved. Of minor objects may be enumerated bosses for shields, needles with eyes, straight knife-blades, fibulæ or clasps, spurs for equestrians, tips for bows, and nails for carpentry work. Metal caps with a sharp projecting spike, and iron handles for pots, were other familiar forms.

Proofs of Progress.—It is sufficient to glance over this list to see that the people who manufactured and employed in their daily life such miscellaneous articles had made long strides toward a developed system of social life, and were familiar with many of the amenities of civilization. Although to the writers of Greece and Rome they seemed barbarians, to us, who have been taking a hasty survey of the very long period of lower culture which preceded them, the Central European tribes of this epoch appear far advanced on the path of intellectual progress.

If we may judge from what are believed to be the oldest specimens of iron swords in Central and Western Europe, such as those obtained from the cemetery at Hallstadt and elsewhere, the introduction of this metal brought with it little if any change in the form and character of the weapons then in use. There is no such rapid advance in the designs and processes of the arts as we had occasion to note at the period when bronze came into general use instead of stone. The change, indeed, was a much less vital one. This is obvious from the fact that the Egyptians, though from remotest times familiar with the manipulation of iron, did not generally esteem it as valuable as bronze. Probably this arose in a measure from a want of familiarity with processes for converting iron into steel, and thus adding greatly to its value as a material for fabricating cutting instruments.

Method of Making Steel.—Those native tribes of Central and Western Europe who have been vaguely called the Celtiberians had learned or had discovered a method of manufacturing steel implements in an effective though tedious manner. The classical historian Diodorus Siculus particularly mentions their process as one new to the Greek and Roman smiths, and so successful that “neither shield, helmet, nor bone could resist the blows of swords so tempered.” The means employed was to bury the iron blade for a long time in the earth in a bed of charcoal. When taken out it was hammered repeatedly without heating, and thus brought into shape. Some authorities say that the remarkably fine temper of the Japanese swords is obtained by a similar process of prolonged inhumation.

The results of this process are, however, uncertain, and consequently the tools of the early Iron Age differ much in hardness and temper. The Danish chemist O. Blom tested five specimens from the most ancient deposits of iron relics in Denmark. One of them proved to be of very finely-tempered steel, one of steel of an inferior quality, and the remainder of soft iron.

Divisions.—For convenience of study antiquaries have divided the prehistoric Age of Iron, so far as it refers to that portion of Europe outside of the dominion of Rome, into three epochs. The first of these embraces the time from the introduction of the metal down to the year 450 A. D.; the second, from that date until 800 A. D.; and the third, the two or three centuries which followed until the north of Europe appears in written history.

Introduction of the Metal.—In Italy and Greece iron superseded bronze about seven or eight centuries before the Christian era; about 200 B. C. a practical knowledge of it had extended over Gaul and Britain; by the commencement of our era it had penetrated to the basin of the Baltic Sea, to Denmark, and to the Gothic tribes; while for centuries later the isolated and savage peoples of the Scandinavian Peninsula, of Finland, and of North-western Russia knew no metal whatever, as we learn from the Latin historian Tacitus, who tells us that in his day the “Fenni” (Finns)

and their neighbors made their arrow-heads of sharpened bones. On the other hand, in South-eastern Russia and among the Scythians the use of iron in a variety of forms, some of them highly artistic, was familiar as early as the sixth century before our era. It had been introduced by merchants and traders from the Greek colonies at the south, and the "kourgans," or ancient Scythian tombs, of the southern provinces of Russia have yielded many fine specimens of worked metal.

GENERAL REMARKS ON PREHISTORIC ART IN EUROPE.

Universality of Progress.—The outlines of the record of man's existence before the dawn of history which we have now given are sufficient to enable us to draw certain highly important conclusions as to his early character and later development. He presents himself to us at first as very little above the brute; he is unintelligent, unambitious. Tens of thousands of years pass by and he changes scarcely perceptibly. But, taking our observations at widely-separated intervals of time, a change is visible. Small and unimportant as it seems to us, there is a gain, a progress, a steady advance. What if it cost him two hundred thousand years (see Vol. I. p. 180) to learn that a stone could be polished, and thus improved as a tool, by rubbing it with another stone? The whole of the future was before him.

Ethnic Character of Progress.—This advancement did not proceed everywhere alike. It was, as it has always been, ethnic in its character. Nations, like individuals, have different gifts, and as in historic times first one nation, then another, has contributed that in which it is most skilled to the general progress of the race, so in studying the art-products of prehistoric ages we recognize clearly that the various tribes who successively occupied European soil, though each was superior in intellectual powers to its predecessor, by no means excelled in the same lines. The epoch known as the Solutréen (see p. 19) was the high-water mark of art in chipped stone (see *pl.* 1, *fig.* 6); in the Magdalénien Epoch, which immediately followed, bone was in greater favor than stone, and the skill in working the latter fell off noticeably.

Art of the Magdalénien Epoch.—In the Magdalénien, however, the arts of design, not wholly unknown in the Solutréen, acquired an astonishing development at the hands of a race imbued with a strong æsthetic sense. They covered their tools and weapons with intaglios and engravings, or they sought to adapt them to the form of some natural object. Their models were principally drawn from the animal world. Several statuettes in stone and bone have been discovered in deposits dating from this age. Some of these are of the human figure, male or female, but the majority depict animals of the chase. From these and the engravings on bones we can learn what were the principal animals which then inhabited the European woods and streams. The mammoth, the reindeer, the elk, the aurochs, the bison, and their associates, all long since extinct in Central Europe, are shown with a vigor of outline that betokens the real

though untrained artist. There are also a few fishes, some birds—notably the swan—and rarely plants.

Subjects of Engraving.—Occasionally the engraver would attempt to represent a scene from life. One such incident is a combat between two deer; the one is down, the other stands over him. Again, there is a hunter chasing a herd of aurochs. In such scenes there is no real grouping. The animals are depicted in single file—a method employed by the Indian tribes of the plains in painting their buffalo skins, and quite commonly by all peoples at the incipency of art. (See Vol. I. *pl.* 38.)

Decorative Designs.—Merely decorative designs abound in the works of this epoch, but they are very simple. Usually they are straight lines set at an angle and repeated; there are no composite figures, such as triangles, crosses, or squares. Curved lines are noticeably rare, except as parts of compositions. It is doubtful if there are examples of their use for pure decorative effect. The figure of the circle or of the spiral is not seen, and there is an absolute lack of any drawings which we might suppose were intended for symbols or ideograms. The zigzags, the chevrons, and such-like figures, common enough, were simply for ornament, and aspired to no more recondite use.

Loss of Artistic Powers.—The artistic sense revealed in these productions does not appear in rare examples and limited localities; it is common to all the remains of the Magdalénien Epoch, in France, Germany, Belgium, and England. This testifies to its ethnic character; it was a trait of the whole people who then inhabited those regions. All the more surprising is it to note how completely it disappears in the next epoch, that of the early lacustrine habitations, at the beginning of neolithic times. The abundant remains from the lakes of Zurich and Pfäffikon in Switzerland show no trace of the arts of design and drawing. The nations whose existence and culture they disclose were far ahead of the cave-dwellers of the Magdalénien Epoch in technical procedures, in the arts of practical life, and in social organization. They had definite religions, domestic animals, agriculture, but they had not the imagination and the perception of significance in line and color which characterize a people endowed with the feeling for art.

Introduction of Bronze.—As has been observed (p. 47), the introduction of bronze brought with it a revival of the love of decorative art and an appreciation of symmetry of form. This can be traced without much doubt to the influence of Etruscan models and artisans; and this ancient state, in turn, seems to have borrowed its inspiration at some remote date from the nascent civilization of the Orient and from Egypt, but especially from the former. Whatever may have been the capacities of the white race in Europe for independent self-development, the fact remains that in later prehistoric as well as in historic times it owed its artistic and intellectual progress chiefly to stimuli which came to it from the far-distant East, perhaps from another race of men.

PREHISTORIC ARCHÆOLOGY OF THE WESTERN HEMISPHERE.

THE nomenclature of the Archæology of the Western Hemisphere is closely similar to that of the Eastern. In each the development of the human race ran parallel courses. Beginning with a rudely-formed, simple implement, this was in time supplanted by others of compound form and higher finish. A steady improvement in art-forms can be traced, until at the time of the Discovery by Columbus there was not a tribe on the continent nearly so low in culture as the first inhabitants of the soil.

Meaning of "Prehistoric" in American Archæology.—The date of the Discovery may be taken as that which separates the *historic* from the *pre-historic* in American annals. It is true that there are chronicles in existence which contain the history of particular nations for a few generations anterior to their first contact with the whites, but these are at best of uncertain tenor and refer to limited localities. In general, we may say that in America whatever is ante-Columbian is prehistoric.

Epochs of American Archæology.—Although the analogies of development in the two hemispheres are obvious, we can scarcely apply to America the later portions of the scheme given on page 28. This is particularly noticeable with reference to the use of metals. Several American nations were familiar with the employment of copper in the manufacture of implements, and at least two, the Mexicans and Peruvians, with bronze. But even these could not be said to have arrived at the Age of Bronze. That compound was not what they preferred for the production of cutting instruments; and the nation in many respects superior to either of them in artistic skill—the Mayas of Yucatan—was practically unacquainted with metals, and was wholly in the Age of Stone. One reason of this difference between the art-growth of the two hemispheres was the abundance in tropical America of the volcanic mineral *obsidian*, which splits with great facility into splinters regular in outline and with a remarkably sharp cutting edge. Even where bronze was known, most implements for cutting or piercing, as knives, arrow- and spear-heads, lancets, etc., continued to be made of obsidian.

Knowledge of Iron.—Iron in its industrial applications was totally unknown to any tribe in the Western Hemisphere. It was, indeed, occasionally used in decoration (see Vol. I. p. 173), and a few implements hammered out of native or meteoric iron appear to have been in use on the north-west coast of North America. But all such examples are insuf-

ficient to prove that even the incipency of an Age of Iron was to be found anywhere in the Western World.

Divisions of the Subject.—We shall therefore treat of the Archæology of America as lying altogether within the Age of Stone. With reference to the character of the remains, it is divided distinctly into the Palæolithic and the Neolithic Period, both of which can most profitably be studied in a geographical arrangement, as follows:

I. PALÆOLITHIC PERIOD.

1. In North America;
2. In South America.

II. NEOLITHIC PERIOD.

- A. Area of the United States;
- B. Area of Mexico and Central America;
- C. Area of Colombia and Peru, or the Andean Area;
- D. Area of Southern and Eastern South America and the West Indies.

These divisions of the Neolithic Period are not geographical only; they are those of related culture, presenting strong similarities within themselves, and equally strong contrasts to the other areas named. We shall endeavor to make this evident by presenting in the illustrations and descriptions the special forms of art characteristic of each division.

I. PALÆOLITHIC PERIOD.

Origin of the Native Americans.—From the date of the discovery of America until very recent years it was taken for granted that the ancestors of the native inhabitants of the continent had immigrated from Europe, Asia, or Africa. In accordance with the prevailing beliefs of the time, the date of this immigration was placed within the historic period or shortly before it—that is, not more than four or five thousand years ago. Numerous theories were framed to account for the event, and to explain whence the first immigrants were derived and the route they pursued.

Since modern science has popularized views quite different from those previously current as to the origin of man and the length of his residence on the globe, several writers have maintained that the scene of that origin was in America, or at least that the American race was an independent evolution of the species, never filially related to any variety found in the Eastern Hemisphere.

For reasons which have been given with sufficient fulness in Volume I. (p. 29), it is impossible to accept in full either of the above doctrines. The results of modern research in the domain of zoology forbid us to suppose that the human species ever descended from any of the American forms of the higher mammals; while, on the other hand, geological discoveries unquestionably place man both in North and South America as the contemporary of animals long since extinct, and at the date of the formation of very ancient Quaternary deposits. We are obliged, therefore, to conclude that he was indeed an immigrant from the Old World,

but at a period so remote that it probably antedated the separation of the species *Homo* into its sub-species.

Route of Immigration.—The question of the route by which the earliest immigrants reached the Western continent has continued interest, and is of moment in comparing the early art-relics. Most writers have without hesitation maintained that the route through Siberia and across Behring Strait was that which offered the fewest difficulties, and therefore must have been adopted. No doubt there was some intercommunication between the inhabitants at that point; even to-day the Namollos of the Asiatic coast are unquestionably cousins of the Eskimos (see Vol. I. p. 209). Families, and perhaps whole tribes, have crossed and recrossed the narrow sea or the frozen strait in that region. As has been observed on page 41, Professor Dawkins thinks that the Eskimos themselves are lineal descendants of the tribes who at the very close of the Glacial Epoch in Europe made their homes in the caves of Belgium and France, and, following the great ice-sheet as it moved northward, at last reached the Arctic Zone in both continents along with the reindeer and the hairy mammoth.

But it will be seen that this reasoning, if conceded in every point, is fatal to the theory that the most ancient Americans came by the Siberian route. Down to the very close of the Palæolithic Age that route was apparently covered to the depth of thousands of feet by vast glaciers. For, even allowing, as some maintain, that the continental ice-sheet of the Glacial Epoch did not cover Siberia and Alaska, there is abundant evidence that the western slope of the Rocky Mountains was a scene of local glacial activity on a large scale down to a comparatively recent date. Long before then, however, communities of men lived and toiled on the Atlantic coast, in the Mississippi Valley, even in South America. No such time as has elapsed since the commencement of the Neolithic Period in Europe is sufficient to explain the dissemination of art-relics in the quaternary strata of the two Americas, or the strong racial peculiarities so developed throughout these areas that they stamp the American race as one everywhere, and every whit as true a sub-species as the white or the black race.

A more plausible suggestion has already been offered (p. 20)—one advocated by several of the ablest archæologists of Europe and supported by many facts from geology and the distribution of living species. This is that man reached the American shores by crossing a continuous land-area which at the close of the Tertiary and the beginning of the Quaternary connected America with South-western Europe. This bridge was destroyed by glacial action, and after that the inhabitants of the two hemispheres pursued independent lines of development.

Glacial Phenomena in America.—The study of these glacial phenomena is intimately connected with some of the most important problems suggested by palæolithic art in America, and we are obliged, therefore, to devote some space to it.

Striæ or scratches on the surface of rocks, the presence of immense blocks of granite and other minerals at a great distance from their native beds, and the existence of distinctly traceable terminal moraines, heterogeneous accumulations of earth and stones characteristic of glacial action, all prove that at one time vast sheets of ice covered North America, reaching south as far as to the valleys of the Ohio and Missouri Rivers. Other glaciers extended from the flanks of the Rocky Mountains over the Pacific coast. In New England the glacial striæ show that the ice-sheet attained at one time a thickness of three thousand feet, while in the upper Mississippi Valley it probably did not exceed fifteen hundred feet. (Comp. Vol. I. pp. 25, 28.)

Similar conditions prevailed in South America. From the Antarctic Pole toward the Equator the glaciers extended almost to the Tropic of Capricorn, while others descended the slopes of the Andes and buried the plains which border the upper streams of the Amazon.

Interglacial and Postglacial Action.—The above-mentioned conditions were not continuous in either the Northern or the Southern continent. In both the great ice-sheet had periods of advance and of recession. During the latter the climate became temperate or warm. Animals and plants repossessed the earth, and remained until driven off by the increasing cold. As the glacier dissolved under the growing heat, it poured off mighty torrents of water, carrying gravel, sand, and even considerable blocks of stone, from its moraines to a distance of many miles.

These events give us a Glacial Period, subdivided into one or more Interglacial Periods and a Postglacial Period. We do not know whether these were contemporary in the Southern and Northern zones, nor has their relative length been ascertained. The general sequence of the occurrences, however, may be considered demonstrated. There can be no question of the relation of the moraines to the glacier; and there are other deposits which competent geologists assign with equal positiveness to an interglacial or a postglacial action (see p. 20).

Remoteness of the Glacial Age.—It is precisely in strata derived from those glacial phenomena that the oldest authentic specimens of human art in America have been found. It would be particularly interesting, therefore, if by some means we could fix the remoteness of some part of the Glacial Age. The effort is not so hopeless as it may at first seem. Nature supplies several chronometers which we may interrogate. They may be classed under three headings: 1, the amount of the glacial deposit; 2, the extent of erosion of valleys since the Glacial Epoch; 3, the extent to which glacial depressions have been filled with sediment. While the first of these would give some idea of the length of time during which the glacier remained, from the last two an estimate could be framed of the time intervening since its last appearance.

A systematic study of these evidences has not yet been undertaken. The figures offered, therefore, may be considered provisional only. Most geologists are agreed, however, that thirty thousand years since the final

disappearance of the ice-sheet from the area of the Eastern United States would be a short enough period to allow. (Comp. Vol. I. p. 28.)

Extinct Animals.—On pages 24–27 we have passed in review the great animals, now extinct or migrated, which characterized the Quaternary of South-western Europe. When we undertake a similar survey for the Temperate Zone of North America, we meet many analogies. There also we discover the bones of the mammoth, elephant, horse, reindeer, bison, musk ox, and other fauna whose constitution fitted them to endure the rigors of an almost or wholly arctic climate, and which indicate that at some time during that period the Ohio Valley was as cold as is now that of the Mackenzie River of British America.

The true mammoth (*Elephas primigenius*, pl. 1, fig. 29) has left abundant remains in North America, principally on the Pacific coast. The huge bodies of these animals, nearly entire, have been found in the frozen mud-cliffs at Eschscholtz Bay, Alaska, and many of the streams of that Territory are strewn with fossil ivory from their tusks.

A species closely allied to the true mammoth, and probably merely one of its varieties, is the *Elephas Americanus*. Its remains are found abundantly in what are called the “loess” beds of the Mississippi Valley, a formation considered immediately postglacial.

The mastodon (*Mastodon giganteus*, fig. 30) was an animal almost peculiar to the area of the United States. He does not appear to have ranged north of the St. Lawrence Valley nor south of the mouth of the Rio Grande. He is a comparatively recent animal, none of his remains appearing in glacial or preglacial strata. He arrived later than the American elephant, and survived him for a long time. Many believe, indeed, that the last individuals of this species perished so recently that they were remembered by the Indians and are referred to in their traditions. In the peat-swamps of New Jersey, the bone-licks of the Ohio Valley, and similar boggy places elsewhere, the remains of the mastodon have often been found in a surprisingly perfect condition. (See p. 62.)

The great musk ox (*Ovibos bombifrons*) and the reindeer (*Cervus tarandus*), both now confined to the very coldest latitudes of the North, at one period of the Quaternary found a congenial home as far to the south as Southern Missouri and Kentucky, where they left many skeletons.

Although at the epoch of the Discovery by Columbus not a single species of the horse survived on the American continent, many species had roamed its plains in earlier ages. One of these, of large proportions, *Equus major*, frequented the area of the Gulf States; while another, *Equus parvulus*, less than three feet high when full grown, wandered over the plains on the eastern slope of the Rocky Mountains. Other species have left their remains on the Pampas of South America.

A huge lion (*Felis atrox*), whose bones have been found near Natchez, a large tiger (*Trucifelis fatalis*), which frequented the area of Texas, and a fossil bear (*Ursus Americanus*), correspond closely to the similar power-

ful and ferocious species which we have mentioned as characterizing the Quaternary of Western Europe.

In the Southern continent many animals of the early Quaternary are now extinct. Besides the horses already mentioned, these include dogs of several varieties, gigantic sloths, deer, and several species of *Glyptodon* (*fig.* 33), an animal something like an armadillo, and especially interesting from its connection with archæological questions.

Provided with these general facts from geology, we may now approach the consideration of

I. THE PALÆOLITHIC PERIOD IN NORTH AMERICA.

Most archæologists and geologists who have personally examined the evidence are now of accord in the opinion that man existed in various parts of North America during the Glacial Epoch, and a few insist that he was there long anterior to that event. The testimony on which this conclusion is based and the character of human remains discovered may be presented under the names of the various localities believed to contain these ancient objects.

Trenton Gravels.—The southern border of the great ice-sheet, pushing before it its terminal moraines, descended on the Atlantic coast to the latitude of New York harbor. From that point it extended northwest and west, crossing the Delaware River a few miles above its junction with the Lehigh. As the ice melted, furious torrents poured down the valley of the Delaware, carrying with them sand and stones, which first found a spot where they could sink to the bottom and be at rest in the broad expanse, south of the hills, where the city of Trenton now stands. Here the débris was deposited in strata sometimes forty, and even fifty, feet in thickness, resting upon a secondary clay formation.

Scattered through this early postglacial gravel deposit, at various depths down to the very bottom, and sometimes on the clay itself, are found stone implements (*pl.* 1, *figs.* 15–18) fashioned by the hand of man.

The first to make this remarkable discovery was Dr. Charles C. Abbott of Trenton, who reported it in 1877. Since then the Trenton gravels have been carefully studied by a number of eminent scientists, such as Professor W. Boyd Dawkins of England and Professor Henry W. Haynes of Boston, both high authorities upon palæolithic implements, and they agree in pronouncing that the implements found by Dr. Abbott, both in their forms and in the situations in which they occur, closely correspond to those which are disinterred from the river drift and gravel-beds of the Thames and the Somme.

A study of the locality at once brings these implements into definite relations to the Glacial Period. One of the most able glacialists in the United States, Professor G. Frederick Wright, states positively that “the gravel in which they are found is glacial gravel deposited on the banks of the Delaware when, during the last stages of the Glacial Period, the

river was swollen with vast floods of water from the melting ice. Man was on this continent at that period, when the climate and ice of Greenland extended to the mouth of New York harbor." Professor H. Carvill Lewis, who has also devoted much care to the study of glacial action in the United States, and has issued a special report on the age of the Trenton gravels, agrees with this, pronouncing the gravels "a postglacial deposit, but still a phenomenon of essentially glacial times."

We may conclude without hesitation, therefore, that in these antique tools we have decisive evidence of the presence of man on the banks of the Delaware River for the whole period during which were deposited the fifty feet or more of gravel.

The gravels of which we have been speaking are overlaid by a bed of sand from one to five feet in thickness, deposited at a later date, of course, and under other conditions. In this sand are found rudely-chipped arrow-heads, less symmetrical than those which appear in abundance in the surface loam resting upon the sand and inferior to them in workmanship. Moreover, the material differs. The implements both of the gravel and the sand are of argillite, a tenacious stone abounding in the vicinity; while the surface finds, extremely well made, are of flint, quartzite, and jasper, often of such lithological characters that they indicate an origin at some distant point.

Thus we have in the Trenton deposits the best illustration yet pointed out on the continent of the succession of the older Palæolithic Period, that of simple implements; the newer Palæolithic Period, that of compound implements,—both of stone merely chipped; and, lastly, the Neolithic Period, with its weapons and utensils of bored, ground, and polished stone.

New England Finds.—In 1882, Professor Henry W. Haynes of Boston reported the discovery at several points in New Hampshire and Massachusetts of stone implements in designs ruder and more primitive than those of the Trenton gravels. They consist principally of simple forms, one end of which is adapted to be held in the hand, while the opposite one can be used for chopping or cutting. Some display a rough symmetry and have been brought to an edge all around; some are elongated, rather resembling chisels; while others are smaller and have the character of knives. They were fabricated out of hard and tough stones, such as quartzite, felsite, or granite. Often they have been fashioned out of pebbles from the glacial drift which still retain a portion of the original surface. This circumstance proves that they must be postglacial in date, though clearly the product of a race much less advanced than the New England Indians as known to history.

Upper Mississippi Finds.—It will be seen that the Trenton and the New England finds may, indeed, remove man's residence on this continent as far back as to the times immediately after the subsidence of the last great ice-sheet. But a discovery in Minnesota, on the Mississippi above St. Paul, appears to carry him beyond this, into the midst

of the Glacial Epoch itself. At that locality is a deposit known to geologists as "the modified glacial drift of the upper terrace of the Mississippi;" they assign it to a period antecedent to the last glacial extension—that is, to the last "Interglacial" Period.

In the midst of this glacial drift, and underneath it, resting upon the much older strata, have been found quartz chips and rough celt-shaped fragments, pronounced by several expert geologists to have been "unquestionably fashioned by the hand of man."

Professor Alexander Winchell was the first to call attention to them, in 1878, and in 1884, Miss Frances E. Babbitt described such a find at Little Falls, Minnesota. It appeared to be the site of an ancient workshop, the glacial drift resting undisturbed above it to the depth of fifteen feet.

Nebraska Loess Beds.—In Nebraska there are certain ancient lake-beds, long since dried up and filled with a deposit called "loess," usually considered immediately postglacial. This deposit is rich in fossils, and contains among other remains the bones of elephants and various large and long-since extinct Mammalia. In close juxtaposition to them, sometimes actually beneath them, Professor Aughey, the United States geologist, found arrow-heads of stone, dropped apparently by the ancient hunters as they crossed the lake or pursued their game in the marshes which were left behind it. Although these arrow-heads are rudely chipped, they are compound in form, with a stem and barb; hence we cannot assign them to the first epoch of the Palæolithic Period (see page 28). Though very ancient, they certainly belong to a stage of culture, and probably to an era, long posterior to the age of the Trenton gravels.

Auriferous Gravels of California.—The finds by which it has been endeavored to prove an antiquity for man in America greater than in the Eastern Hemisphere are chiefly those from the gravel-beds of California. They consist both of stone implements and of human bones, and have excited prolonged discussions in scientific circles.

The strata of the western slope of the Rocky Mountains reveal evidences of glacial and torrential, as well as of volcanic, action on a large scale. A layer of gravel containing blocks marked with glacial striæ will underlie a lava-stream several feet in thickness; this, again, will be covered with a second lava-bed, and so on through hundreds of feet. In these gravel-beds are found bones of the elephant, the mastodon, and other extinct Mammalia of the early Quaternary or Postpliocene formation; and with these, in original connection and at great depths, occur implements of human workmanship—not rarely, but, according to the State geologist, Professor Whitney, "very frequently."

Nor are these the rough, coarsely-chipped tools of the primitive ages, often so ill formed that even an expert hesitates to decide whether they are of natural or artificial shaping. So far from this, the stone implements from the California drift are often of surprising symmetry of form and perfection of workmanship. One such is figured and described by Dr. J. W. Foster, and is reproduced on Plate 1 (*fig. 27*). "The material

is syenite, ground and polished so as to display in marked contrast the pure white of the feldspar and the dark green of the hornblende. It is in the form of a double cone, one end terminating in a point, while the other end is blunted, where it is pierced with a hole which, instead of being a uniform gauge, is reamed out, the reaming having been started from the opposite sides. When we consider its symmetry of form, the contrast of colors brought out by the process of grinding and polishing, and the delicate drilling of a hole through a material so liable to fracture, we are free to say that it affords an exhibition of the lapidary's skill superior to anything yet furnished by the Stone Age of either continent."

This was discovered in a gravel-bed in the valley of San Joaquin, thirty feet below the surface—a deposit considered by the State geologist to be Postpliocene (older Quaternary). The description is instructive, as indicating how Archæology may at times correct Geology. An instrument of this character could not possibly have an antiquity so great. It would be in contradiction to the testimony of other postpliocene deposits the world over. If the instrument, as alleged, was found in original connection in the gravel, then the bed was of a comparatively recent alluvial formation.

A more famous discovery in California was that of the "Calaveras skull" (*pl.* 1, *fig.* 34). It was taken from a mining-shaft one hundred and fifty feet deep in Calaveras county. The shaft passed through five beds of lava and volcanic tufa and four beds of auriferous gravel. The lower gravel-beds are considered as belonging to the Pliocene Epoch of the Tertiary, so that this skull, if originally from that deposit, carries the advent of man in North America far back of the age of the earliest Quaternary in Europe. The skull was carefully examined by Professor Jeffries Wyman, who was inclined to admit its age. The craniological type was not markedly low (front view, *fig.* 34). Later inquiry revealed the fact that the skull was not taken directly from the gravel, but was found at the bottom of the pit in a detached mass, which may have fallen from one of the upper gravel-beds. This circumstance has cast an air of doubt on its exact age. Nevertheless, there is no doubt that in repeated instances in California the bones of man have been found in intimate and original connection with those of the mastodon and the elephant, and at great depths—from one hundred to one hundred and fifty feet below the surface. Hence we are forced to admit that tribes inhabited that coast at a time when these gigantic mammals roamed there in great herds.

Mexico and Central America.—Geologic study has as yet touched Mexico and Central America but superficially, so it is not surprising that there are few reports of palæolithic discoveries in those regions. But that they also had human inhabitants at a very remote period is evidenced by several observations of the kind which have been published.

Thus, in 1884 a remarkable find of human remains was made at a locality called Peñon de los Baños, not far from the city of Mexico. Portions of a human skeleton were discovered firmly imbedded in a calcareous

tufa, all the surroundings of which indicated that it dated from the older Quaternary. The teeth were regular, and the cuspids had almost the same shape as the incisors, a peculiarity of many ancient Aztec remains.

The discovery of ancient human footprints in lava-covered mud on the shores of Lake Nicaragua by Dr. Earl Flint in 1882 seems also to prove a very early residence of man in that locality. But it must be acknowledged that in a region of active volcanic agitation the course of nature is so abrupt, violent, and irregular that all ordinary measures of the age of deposits become inadequate.

Other Ancient Deposits.—From time to time various other deposits containing human remains have been described, and asserted to show a geological antiquity for the human race in North America.

One of the earliest of these discoveries was by Dr. Koch of St. Louis, who in 1839 disinterred the skeleton of a mastodon from an ancient bog in Gasconade county, Missouri. In immediate connection with it he found flint arrow-heads and pieces of charcoal, as if the ancient inhabitants had attacked and destroyed the animal when mired. His report was received with great incredulity, and has repeatedly been challenged, but there is nothing improbable in it. The mastodon was certainly alive in that locality long after man was resident there. The presence of stemmed and barbed arrow-heads, however, deprives the supposed event of any great antiquity, as stone implements of this character first came into use in the later portions of the Palæolithic Period.

We might also mention a fragment of a human pelvic bone found in a fresh-water loess formation near Natchez, and associated with the remains of the mastodon; various products of human industry with and below the bones of elephants in the salt-diggings at Petit Anse Island, Louisiana, and even fragments of pottery among the bones of the mastodon and other extinct quadrupeds on the banks of the Ashley River, South Carolina. These and others have not in all points received that confirmation which scientific students desire; but there is nothing so extraordinary in them as to call for unusual scepticism. There is not the slightest doubt that man was the contemporary of these animals, and it is quite possible that some of them survived after the period of polished stone implements and of pottery had well begun.

Crow Creek Deposits.—A few instances have been adduced by scientists which, it has been claimed, establish the presence of man west of the Rocky Mountains even in full Tertiary times.

One such refers to a deposit of gravels in Wyoming Territory, on Crow Creek, a branch of the South Platte River. In these gravels Mr. E. L. Berthoud discovered in 1872 a number of roughly-chipped flint implements associated with irregular piles of pebbles. The materials employed were jasper, agate, granite, and basalt. The shape, the location, and the rough finish of the implements reminded the explorer of similar utensils from the gravel-beds of the Somme in France. The age of the deposit

in which they occurred became, therefore, a question of the highest interest. Two species of shell obtained from the bed were decided by a competent conchologist to belong to species "certainly not later than the older Pliocene, or possibly Miocene." But this apparently satisfactory identification is largely undermined by another part of Mr. Berthoud's report, which describes these gravel-beds as formed by washings from a high dividing ridge to the north made up of miocene conglomerate. It seems probable, therefore, that these shells were washed down from the uplands, and that the gravel-beds are Quaternary.

Carson Footprints.—Another supposed evidence of man in the Miocene acquired considerable celebrity a few years ago. This evidence was in the shape of his footprints distinctly impressed in considerable numbers on the sandstone of that age in Eagle Valley, near Carson, Nevada. The most careful observers agree that the resemblance of these marks to that of an Indian's moccasin when pressed upon a layer of thick mud by the weight of the body, is exceedingly close. To be sure, they seem too large, the footprints being nineteen inches long by six or seven inches broad. But this objection was in a measure removed by considering that in soft and slippery mud an exaggerated impression of the foot would be given, and still further, in the minds of many, by finding a man now living on the Pacific coast whose shoes measure along the sole eighteen and a half inches. Nevertheless, a critical study of these footprints shows that the creature which left them threw its weight on the outer edge of the sole of the foot, and that it had a row of bristles along the edge of its sole—facts which leave scarcely a doubt that we have to do here, not with human footprints, but with those of a large species of sloth or some such edentate.

2. THE PALÆOLITHIC PERIOD IN SOUTH AMERICA.

One of the most interesting contributions of Archæology to American Ethnology is that of the relics of man in South America in very old Quaternary, possibly Interglacial, deposits. This proves that at an extremely remote period our species roamed over large tracts of the Western Hemisphere, extending from the great glacier of the Northern to that of the Antarctic latitudes. We shall briefly present the grounds for this conclusion.

Relics in Peru.—From an early date the occurrence of human remains in banks of marine shells now quite above high-water mark attracted the attention of observers, but to this day we have no satisfactory geological reports on the deposits of the Peruvian coast. In the guano deposits of the mainland, and especially in those on the Chincha Islands, articles of human workmanship frequently occur at a depth and in surroundings which show that the whole deposit has been more than once submerged and again elevated since these articles were dropped. That they are art-products of man cannot be questioned, as they are small images cut out of gold and silver sheets; and this teaches that in a volcanic country our

usual means of estimating the ages of deposits may prove deceptive, for we cannot assign any work in metal to the Palæolithic Period.

Brazilian Caves.—The earliest investigator of the remains of prehistoric man in South America was the Danish physician Dr. Lund. In 1837, in searching the contents of a cave in the province of Minas Geraës, Brazil, he disinterred the bones of nearly thirty persons, of all ages and both sexes, lying in immediate intermixture with numerous fragments of the skeletons of the lower animals. Of the latter, some were of living species, others of those long since extinct or unknown in the locality, among them the horse and the megatherium. All these osseous remains lay upon the original floor of the cavern, imbedded in a hard clay and covered with an undisturbed stalactitic deposit and fragments of rock which had fallen from the roof of the cavern. The human bones presented the same chemical characters and general appearance as the skeletons of the extinct species with which they were associated. They appeared to have all perished together by some unexplained catastrophe. (Comp. pp. 36, 37; also Vol. I. pp. 27, 37.)

Pursuing his discovery, Dr. Lund examined several hundred other caverns in the province of Minas Geraës. In a number he was rewarded with the discovery of other deposits of human bones under conditions similar to those mentioned above. From the whole of his researches he established the existence in that locality of forty-four now extinct species, contemporary with all of which some race of men had flourished.

It is not easy to define the precise age of these cave-deposits, but it is evident that they extend far back into the Quaternary or Pleistocene Period. Some would have it that they prove a Tertiary antiquity for man. But there are reasons, especially the climatic characters revealed, which render this opinion doubtful and needless. There is, however, no good reason for denying that the plains and valleys of Brazil were inhabited by men in the European Palæolithic Period.

Pampas of the Argentine Republic.—Over a large portion of the southern extremity of South America there extend broad, level plains, of a rich soil, covered with strong grass and but few trees. These are the Pampas. Their geological age is not positively decided. Some who have studied them refer them to the Pliocene of the Tertiary; Darwin would make them recent, almost Alluvial; while the majority assign them to the early Quaternary, to a Pleistocene Period, and connect them directly with Antarctic glacial action.

About 1874, M. Ameghino discovered in the earth of which the Pampas consist a number of human bones, pieces of charcoal, worked stone and bone implements, and the bony shafts of skeletons cracked for their marrow, in intimate association with the remains of large extinct animals belonging to either the Pliocene or the Postpliocene Period. The announcement of this discovery, which proved that man had penetrated even to the far southern extremity of the Western World at that remote epoch, was received unwillingly. But other similar finds, in the Argen-

tine Republic, Patagonia, and Chili, have since come to the support of Ameghino's views, and they may now be regarded as substantiated.

The race whose remains he exhumed were more skilful in working bone than stone, in this respect presenting an analogy to the late Palæolithic (Magdalénien) Epoch of France and Belgium. They also constructed cave-like dwellings, digging a cavity in the earth and covering it with the huge shell of a species of glyptodon (*G. reticulatus*, *pl.* 1, *fig.* 33) now extinct. Their work in stone included arrow-points (*fig.* 23), scrapers (*fig.* 28), chips (*fig.* 21), and awls. In bone they manufactured sundry small implements, as awls, scrapers, etc., and on some broad pieces of this substance numerous transverse scratches appear; but, thus far, no drawings upon or carvings from bones or horns have been reported, such as are frequent in the Madeleine deposits of France.

From these specimens we must place these tribes on a comparatively advanced plane of culture, at about the highest level of palæolithic man.

In Patagonia.—Several discoveries similar to those of Ameghino have been reported from time to time from Patagonia. One of the most recent and satisfactory was by the Italian geologist D. Lovisato. In excavating a deposit on the banks of the stream called Talpalquen, near Azul, he disinterred the jawbone of a *Toxodon burmeisteri*, a species now extinct, and in immediate contiguity to it a fragment of bone which had been dressed by hand. This find, he writes, "places beyond doubt the contemporary existence in this locality of man and these large extinct mammals."

CONCLUDING REMARKS ON THE PALÆOLITHIC PERIOD.

In considering the scattered and rude remains of early man which are attributed to the very first eras of his existence, and therefore are surrounded with momentous significance, it is highly necessary to observe some cautions.

Continuance of Palæolithic Types in Later Ages.—Even when man had long passed his first schooling and had reached neolithic culture, the force of habit, natural conservatism, or the fact that the old form was well adapted to its end, led him to retain many of the types of implements which his ancestors had employed in ruder conditions. Again, as these types were simpler, they commended themselves to the less skilful, and to the skilful when pressed for time. It is not unusual to find fragments and completed implements on the site of the latest Indian workshops which cannot be discriminated, either in size, shape, or workmanship, from those collected in the oldest gravels. The material alone enables the student to pronounce positively as to their age.

The same statement holds true for all the epochs of art. Survivals of ancient forms, often of ancient material, recur in all of them. Long after the Christian era the Celtic and German warriors, then in the Age of Iron, fought with stone axes. The steel hatchet in general use to-day

in Germany differs in shape scarcely at all from that wielded by the woodsmen of the Bronze Age. Again, some objects were perfected early, and were not capable of further improvement. The arrow-heads of the later Palæolithic Age in France offer as fine specimens of the article as can be obtained from any later epoch.

The Palæolithic Period not always Ancient.—Although travellers have discovered no nations which are now or have recently been in the artistic condition of palæolithic man, it remains true that several of them must have emerged from that condition no very long time ago. The tribes of Eastern Australia are still in the infancy of the arts. In New Zealand, Mr. Howorth tells us, two distinct classes of stone implements are found—one rough and only chipped, the other ground and polished. Yet it is probable that both were produced by the ancestors of the present inhabitants at different stages of culture. Only by taking into comparison, therefore, facts from other lines of investigation, as the presence of bones of extinct animals, the obvious age of the deposits, etc., can we assert great age for instruments of the character we have been describing.

Similarity of Rude Implements.—The extraordinary similarity of the shapes and sizes of the oldest and rudest implements has been frequently commented upon by those who have had opportunities to compare them as obtained from distant points. This uniformity cannot be considered of ethnic importance; that is, we cannot found upon it any theories of an affiliation of races or nations among these pristine hordes. The uniformity of their art-products arose from the identity of their simple wants, and the adoption of the most obvious means which suggested themselves to all alike to satisfy them.

The Palæolithic Period not Universal.—We have seen that both in the Eastern and in the Western Hemisphere man wandered widely during the Palæolithic Period. But the doctrine taught by some antiquaries, that his roamings embraced the whole habitable globe, and that we may expect to find his rudely-chipped implements in every country, cannot be sustained. Many islands and some portions of the mainland have received their first human population within historic times; and we may well believe that there were in that older day large tracts of territory which the footsteps of man had never penetrated. Such in the Old World were Switzerland (see p. 35), the highlands of Central Asia, and the extreme North; while in the New World it is probable that the whole of the West Indian Archipelago was first invaded by man in neolithic times, no sign of a more ancient population having been discovered.

II. NEOLITHIC PERIOD.

Transition from the Palæolithic to the Neolithic Period.—As in Europe, so in North America, the transition from the Palæolithic to the Neolithic Period seems to have been abrupt. At least the relics of the two are sharply defined. This is well illustrated, as we have already said (p. 61), by the Trenton deposits. Material, form, and workmanship alike differ.

How are we to explain this? Did the palæolithic man finally succumb to the austere climate which prevailed? or did he migrate to distant regions and the neolithic man move peacefully into his deserted fields? Or was there a merciless conflict between the two, in which the older race utterly perished? Or is the solution simply that we have lost several links in the development of the same people, and that the contrast is merely one of time?

These are interesting questions, to which, as yet, no satisfactory answer has been offered, and we are obliged to leave them to future investigation.

Certain it is that, passing from the second epoch of palæolithic life, represented by the Trenton sands and the loess of the Nebraska lakes, we at once arrive at a period of culture where the grinding, boring, and polishing of stones were practised, where the art of the potter had been discovered, where some knowledge of agriculture was general, and where the dead were honored with formal sepulture.

Although the Stone Age prevailed over the whole continent, not a single tribe was found whose arts were of the palæolithic type—not one that continued exclusively the technical methods of the men of the Trenton gravels.

Areas of Culture.—The Northern and Southern continents may be subdivided into large areas, over each of which many similarities of culture prevailed. Thus, the space now embraced in the United States and the southern portion of British America was held by tribes less advanced than most of those of Mexico and Central America. They have been called "hunting tribes," but this conveys an erroneous idea, as most of them practised agriculture, often to a considerable extent.

There are numerous indications that all the partly civilized tribes of Mexico and Central America (see Vol. I. p. 183) had derived many elements of their culture from a common source, although these tribes themselves differed radically in languages.

Another centre of civilization, having apparently nothing in common with that just mentioned, extended its influence in the valleys and along the western slope of the Andes almost from the Isthmus of Panama south to the Desert of Atacama.

The remainder of the Southern continent, including the West Indian Archipelago, which both ethnologically and by the facts of physical geography belongs to South America, was, when first explored, inhabited by tribes in no wise superior to those of the area of the United States, and generally rather lower in culture.

The examination of the Archæology of these several areas will now engage our attention, omitting, however, from consideration their architectural remains, which have in part been discussed in the previous volume, and will also be spoken of in a subsequent portion devoted to that art. (See Vol. I. p. 102, *pl.* 41-43; also Vol. IV., *pl.* 19.)

A. ARCHÆOLOGY OF THE AREA OF THE UNITED STATES.

As already stated, we shall include in this division the southern portions of British America. At the Discovery the valleys of the St. Lawrence and the Saskatchewan, the shores of Hudson Bay and those of the Pacific slope, were peopled by tribes who had numerous relatives within the boundaries of what are now the United States.

Subdivisions.—This vast region is usually divided for archæological study into several sub-areas, characterized by closer similarities among their relics. Thus there are—

1. The Atlantic Coast area, including the lower St. Lawrence Valley;
2. The area of the Gulf States, from the Rio Grande east to the coast of Georgia and Florida;
3. The area of the Mississippi Valley, extending from the Great Lakes to the Tennessee River;
4. The Plains, along the eastern slope of the Rocky Mountains;
5. The area of the Pueblos in Arizona, New Mexico, and the adjacent territory; and, finally,
6. The Pacific Slope, embracing British Columbia, Washington Territory, Oregon, and California.

The ancient art-products of each of these areas have well-marked peculiarities, with which one who would master the subject must acquaint himself; but for our present purpose it will be sufficient merely to call attention to this general fact, in order that the descriptions we are about to give may not be indiscriminately applied.

Other Subdivisions.—Another division of the Neolithic Period in the area of the United States, especially in its central portions—a division to which some archæologists attach great importance—is that of the “upper” and “lower,” or “surface” and “mound,” series of relics. This is based on the fact that much the larger portion of what we have above defined as “the area of the Mississippi Valley” was, when first explored by the whites, destitute of inhabitants, and yet by the presence of lofty mounds of earth and stones, massive earthworks, extensive embankments and garden-plots overgrown with heavy timber, showed beyond question that at some long anterior time it had been the busy scene of dense populations. (See Vol. I. pp. 215, 216, 224, 225, *pl.* 32, 37-39.)

This subdivision is probably of less importance than many have maintained. There are many strong reasons for believing that the builders of the earthworks of the Ohio Valley were a people of the same stage of culture as, and probably ancestrally akin to, the tribes met by the early white explorers in the Gulf States. These at one time appear to have extended their agriculture and their methods of construction almost up to the Great Lakes; but at a period which we may fix at a few centuries before the advent of the whites the hardy and warlike northern tribes attacked the more peaceful southern agriculturists, destroyed their towns,

and drove the inhabitants far to the south. We shall, therefore, not lay any especial stress on this distinction. The Mound-builders were in the higher, neolithic stage of development, but were not superior to several of the tribes with whom we are familiar in the Gulf States.

Pursuing the general plan which investigates the art-products of man with reference to the material in which he worked, we shall study the Archæology of this and the other areas of the continent as it is represented by articles in stone, bone, shell, clay, and metal.

I. ART IN STONE.

The objects of the Age of Stone were adapted to conditions of social life so widely different from our own that the antiquary is often puzzled to explain their uses. Sometimes he must apply to them provisional names, awaiting a future identification. Hence the nomenclature of the subject is not definitely fixed. To avoid discussion, we shall generally adopt that carried out by Dr. Charles C. Abbott in his various writings, especially in his work entitled *Primitive Industry*, to which the reader is referred who may wish to prosecute the subject in greater detail.

Arrow- and Spear-heads.—These are by far the most abundant of all the stone relics found in the area of the United States. The bow and arrow and the spear or javelin, as instruments of war and the chase, must have been long and widely known. The large stone points are supposed to have been attached to spear-shafts, and the smaller to arrows.

Their material differs with the locality. Quartz and jasper were the favorite stones on the Atlantic seaboard, flint and hornstone in the Ohio Valley, obsidian in the volcanic regions of the Rocky Mountains.

The forms differ greatly, and are thought by some archæologists to be distinctive of particular tribes, localities, or epochs of time. Hence they have been subdivided and classified with perhaps unnecessary minuteness. The more important of these types are shown on Plate 6, as follows:

1. Triangular-shaped arrow-heads (*fig. 1*);
2. Those with indented base (*fig. 2*);
3. Stenimed arrow-heads (*figs. 3, 7, 8*);
4. Stemmed and barbed (*figs. 4, 9*);
5. Leaf-shaped (*fig. 5*);
6. Lozenge-shaped (*fig. 6*).

Others are "dirk-shaped," "twisted," "serrated," "awl-shaped," "bevelled," etc.—refinements which it is needless to enter upon.

The Grooved Stone Axe is a very common implement (*figs. 12, 13*), and presents many varieties of form and size, but none which are typical of particular localities. The groove was excavated so that the implement could be firmly fastened to a handle by a withe or bark rope. It is usually about one-third of the total length distant from the head. One side of the axe is flat and not grooved; this, it is believed, was so arranged that a wedge could be driven beneath the withe to give greater firmness. The axes vary in size from twelve inches in length, weighing

eight or nine pounds, down to three or four inches. The material is syenite, greenstone, or other firm and tenacious substance. Some have double grooves, and others have one or both ends pointed. It is believed that such grooved axes belong to the more recent generations of the Neolithic Period, and were manufactured by the tribes found by the whites, and not by earlier peoples.

Grooved Stone Hammers.—While the axes have one extremity ground to a cutting edge, many grooved implements of similar shape occur without this edge. They are round or elongated pebbles with a groove about their centre. These are “hammers” or “club-head stones.” Some were undoubtedly mauls or sledges, and such have been disinterred in great numbers from the ancient quarries of Lake Superior and North Carolina. Elsewhere they doubtless added efficacy to the native war-club.

Celts.—This term is derived from the late Latin *celtis*, a chisel, and is applied to a hand implement (*pl.* 6, *figs.* 10, 11) with a broad sharpened extremity. This form is highly characteristic of the Neolithic Period. The uses of celts are not clear, but probably they were for working in wood, skin, and similar material. They are usually of hard stone, and vary much in size, some being more than a foot long, others but two or three inches. Some specimens are grooved, as if to fasten them to a handle; others have one surface deeply channelled through the whole length of the implement; in this case they are known as “gouges.”

Semilunar Knives.—A flat pebble chipped and ground to a crescent-shaped edge was one of the earliest cutting instruments. Fine examples of slate (*fig.* 22) and various hard stones are frequently found in the Ohio Valley and on the Atlantic slope. In some instances the fragment of flint is carefully dressed into a blade with sharp edges and a more or less acute point.

Awls or Perforators.—Sharp spiculæ of flint for piercing skins and bark served the earlier men. In later ages great skill was displayed in chipping these spiculæ into a narrow shaft with a fine point and a broad base (*figs.* 17, 18). This might either be held in the fingers or attached to a handle.

Scrapers.—An instrument the reverse in form of the perforator is the scraper (*fig.* 19). This has a broad rounded edge with a narrow base; one side is flat, the other more or less convex; sometimes the base is prolonged into a short handle, forming an instrument which somewhat resembles a spoon. As its name indicates, it was employed in scraping wood, skin, bone, etc. to bring these substances into some desired form. Specimens are common in most of the Eastern United States, and present a great variety of size and finish.

Slick-stones.—These are smooth, polished stones intended to be held in the hand, and were used in rubbing and dressing skins. Many of them are natural pebbles more or less ground, but others are symmetrical in shape and are evidently the product of careful labor.

Mortars and Pestles.—A stone with a natural depression was the

earliest corn-mill. Soon the depression was artificially enlarged and the external surface of the stone dressed into a symmetrical form; the natural pebble at first in use to break the grain was supplanted by the elongated stone pestle, and the compound implement was at hand which has undergone little alteration since. Numbers of these mills are found throughout the United States, some of the finest coming from California. A neat specimen is shown on Plate 6 (*fig. 24*).

Stone Vessels.—Food-vessels, pots, or platters of stone were in use among numerous tribes at the epoch of the Discovery. Soft stones, such as steatite and slate, were most in vogue. The most elaborate specimens (*fig. 27*) are from California.

Spades.—Large and broad flint implements have been disinterred in considerable numbers on the Atlantic coast and in the Mississippi Valley, with peculiar traces of wear which indicate that they had been used as agricultural implements, probably in planting corn and cultivating the soil. They are called "hoe-blades," or, more properly, "spades" (*fig. 21*).

Plummets, or Net-sinkers.—A common and peculiar type of implement (*figs. 14, 15*) is known by these names, both of which are certainly erroneous. The shape is indeed that of the weight which masons attach to their "plumb-line," but this device was totally unknown in America; and it is not likely that articles costing so much labor would be used as net-sinkers. Their true use was doubtless as badges of rank, as personal ornaments, or as amulets.

Discoidal Stones.—Stone discs four or five inches in diameter, sometimes with biconcave sides, highly polished and symmetrical, are frequent in the Gulf States, and more rare in the Ohio Valley and on the Atlantic slope. They are believed to have been used in playing a game popular among the Southern tribes, and are hence also called "chunky-stones." An example, with a cross-section showing the concavity, is given on our Plate (*figs. 25, 26*).

Ornaments, Badges, and Ceremonial Objects.—Some of the finest specimens of work in stone in the United States represent objects of which the uses are quite uncertain. Their frequent delicacy of structure leads to the supposition that they were merely symbolic or ornamental, employed in the ceremonies of religious or civil life or for purposes of decoration or personal distinction. Very delicate stone axes drilled and polished are not rare. One such is shown in Figure 35. It is of slate, and finished with the highest skill. Such forms are sometimes called "banner-stones."

Flat stones with one or more perforations and of symmetrical shapes are known as "gorgets," "totems," or "pendants" (*figs. 23, 31*). They are believed to have been insignia of rank. Sometimes they have rude figures or scratches upon their surfaces. "Bird-shaped stones" (*fig. 20*), apparently representing a bird brooding upon its nest, are frequent in the Ohio Valley, and are said to have been worn on the head by married women. Stone tubes, six to eight inches in length, are seen

in many collections. Some suppose they were employed by the medicine-men in their conjuring acts; others, that they were ornaments for the hair.

Stone Pipes.—As the custom of smoking was with the native Americans not merely the indulgence of an artificial appetite, but a ceremonial observance associated with the most solemn transactions of religious and social life, they expended a corresponding degree of labor and skill in the manufacture of their pipes. These were often of earthenware, but the most valued were of stone. Fragments of such are turned up by the plough in almost all parts of the United States. They are usually of soft stone, as steatite (*pl.* 6, *figs.* 37, 39), serpentine, slate, or fine-grained sandstone; some are of oolite, gneiss, or mica slate; while the most valued are of the catlinite or red pipestone from the celebrated Coteau des Prairies, Minnesota.

There is no special form which can be considered typical of the industry of the Northern Atlantic coast. That, however, which is represented on our Plate (*fig.* 41) is the most prevalent in that locality. Both bowl and base are frequently ornamented with figures in relief representing some animal. In finish the simplest patterns have frequently as much polish and symmetry as the most elaborately carved and otherwise embellished specimens.

The pipes of the North Atlantic area impress the observer with the belief that they were manufactured by the persons who used them, each artificer carrying out his own design; but pipes of the Southern seaboard occur in more regular patterns, and evidently were carved by those who made their preparation a regular occupation. We know also from old records that the natives of the upland regions manufactured them in quantities and traded them to adjoining tribes. The Cherokees were especially celebrated for their skill. Many of their stone pipes are large, sometimes weighing two or three pounds each, and elaborately ornamented with figures of birds, quadrupeds, men, and women ingeniously carved on the bowl and the base. (See Vol. I. *pl.* 38.) Not rarely these groupings are quite obscene, which is an exception in North American aboriginal art, however common in that of South America.

The stone pipes of the Haidah Indians (Kolushes) of British Columbia and Vancouver Island have a strong individuality. They are of a firm black slate which takes a high polish, and they are carved in complex and elaborate details, imitating some animate object. Pipes of this unmistakable material and make have been found in the Mississippi Valley and as far to the east as the States of New Jersey and Delaware. This fact is but one of many illustrating the extent of the aboriginal commerce of the country.

The stone smoking-pipes from the mounds of the Ohio Valley are most interesting. Their characteristic form is shown on our Plate (*fig.* 40). The receptacle for the tobacco is on the middle of a semilunar base about three inches in length, one end of which forms a handle, while a drilled hole

in the other end communicates with the bowl. The head of the carved figure, if the pipe bears one, is turned toward the drilled end. From the size of the hole, it is probable that the pipe was smoked without the use of a stem. The bowl is frequently cut into fairly life-like images of birds and other animals. From their supposed resemblance to the shape of the war-ships so called, they are sometimes spoken of as "monitor" pipes.

Idols and Images.—Representations of birds, quadrupeds, and other animals are common on the stone pipes of the Mound-builders. Separate images which we might suppose to be idols or amulets are, however, rare. They have been found in New Jersey, rudely representing the human head. Others, somewhat better worked, but still extremely rude, representing the human figure male or female, have been exhumed from ancient graves in Georgia and Tennessee. One such from the former State is shown in Figure 32 (*pl.* 6), from Col. Jones's work.

The statement, often repeated, that the Indian tribes of the Atlantic States were not idol-worshippers, is not literally true, as they carved images from wood and stone, and also moulded them in clay, and attached to these objects sacred associations.

Tablets and Inscribed Stones.—Flat stones, regular in shape, with carved designs, have been reported from many sections of the United States. Some of the best specimens are from the Ohio mounds. Their use is uncertain: some competent archæologists regard them as stamps for impressing the design in color on skins, etc.

Several of these tablets, containing elaborate designs or what look like alphabetic characters, have been brought to public notice. All such may be regarded as fraudulent, the general culture of the ancient tribes not admitting of either of these products.

A typical example of an authentic tablet exhumed by the Rev. J. C. Maclean in Southern Ohio is exhibited on our Plate (*fig.* 33).

Scratches upon the surfaces of flat implements have, as a rule, no other signification than as means of decoration. From the accounts of travellers it appears that badges representing the gens or "totem" of the individual (see Vol. I. pp. 135, 223) were at times worn by the later Indians. It would not be surprising, therefore, to find pendants with such devices. In point of fact, however, they are rare.

Rock-writing or Petroglyphs.—Throughout the American continent the traveller comes from time to time upon broad rocks on the surface of which are scratched, pecked, or cut figures of mysterious import and of various designs. Often the position of these surfaces is such that they could have been reached only by great effort, and the artist must have been in constant danger during his labors. The figures themselves are frequently large and complicated, and could have been produced only by long and arduous toil. The skill displayed varies, but in no instance is it much above that of the natives of the region.

Some antiquaries regard all these pictographs as merely the amusement of idle hours, the meaningless products of the fancy of illiterate

savages. But the great labor expended upon them and the care with which many of them are executed testify to a higher origin. They are undoubtedly the records of transactions deemed important, and were intended to perpetuate by enduring signs the memory of events or beliefs.

The rock-writing of America does not present the same characters in all parts. There are several extended areas within each of which these inscriptions display a family similarity, often differing widely from those in other areas. Archæologists are of the opinion that these differences are related to the various methods of sign-language or gesture-speech which prevailed among the early tribes. Ordinary picture-writing, and therefore rock-inscriptions, were connected with this sign-speech, many of the figures being pictures of the gestures. By following out this suggestion some of the inscriptions have been deciphered. (See Vol. I. pp. 122, 221.)

In the area of the United States we find one similar set of petroglyphs extending over New England and the Middle States. The celebrated Dighton Rock, near Taunton, Massachusetts, presents designs akin to those found on Indian Rock in the Susquehanna River below Columbia, Pennsylvania, and to others at various points on the Allegheny River. There are angular lines and outlines of human figures, of animals, and of serpents.

In Ohio at a number of localities, as at Newark, Belmont, and Barnesville, in West Virginia on the Guyandotte River, in Tennessee on Enchanted Mountain and elsewhere, there are found numerous and peculiarly inscribed rocks called "track rocks." They present scarcely any other figures than the representations of the hand- and footprints of man and animals. The carving is clear, sharp, and executed with a firm touch, though the figures are somewhat conventionalized. Evidently through all this territory these sculptures were by the same people. They are found as far south as Forsyth county, Georgia, and west to the Mississippi, as at Limestone Bluff opposite St. Louis. The specimen on Plate 6 (*fig.* 34) from the Newark Rock, Ohio, shows their character.

Another important area embraces Colorado, Utah, New Mexico, and Arizona. Rock-inscriptions are abundant through all this section, especially upon the "dry washes" (beds of ancient streams), as they are called, and on the sides of the cañons. Upon both the eastern and the western slope of the Sierra Nevada, in Southern California, pictographs and inscriptions of elaborate designs, covering large surfaces, have been reported and figured by travellers.

Cup-stones.—A peculiar form of rock-sculpture are the "cup-stones," or rocks in which are excavated one or more circular cup-shaped depressions, these cavities being often surrounded with concentric rings terminating occasionally in a volute or much-coiled line. Such relics have a distinct character, and it is the more remarkable, therefore, that while they are abundant in Northumberland, the north of Scotland, and other

places in Europe, they are found in many examples in America. Their date and their purpose are alike unknown.

They are most abundant in Ohio, especially in the northern part, in and near the valley of the Cuyahoga River, but good specimens have also been discovered along the Ohio River near Portsmouth. By some they are called "spindle whorl-stones" or "mortar-stones," but they are not adapted to either of the uses signified by these terms. A learned monograph upon them has been written by Professor Charles Rau of the Smithsonian Institution. He inclines to the belief that their purpose was of a religious character, probably connected with the worship of the reproductive principle, a form of primitive religion widely prevalent in both hemispheres.

2. POTTERY.

Manufacture.—The manufacture of pottery is the art which broadly draws a line between neolithic and palæolithic man. Some nations on the American continent did not possess it; but the reason of this is seen in their geological surroundings, which did not offer them the quality of earth suitable for the purpose, or in their restless life, which made such fragile objects burdensome. Usually, the material was prepared by mixing pounded shells or coarse angular gravel with suitably moistened clay. The wheel being unknown, the vessels were formed by hand, dried in the shade, and afterward further hardened by exposure to the sun or to the flames of an open fire or kiln.

The ancient potters were not familiar with glazing, but they very generally had an eye for the beautiful as they understood it, and there are few specimens which do not strive after symmetry of outline or which fail to display traces of decoration in line or color (*pl. 6, figs. 45-53*). Glazing, indeed, is occasionally seen on their ware, but it was accidental.

In size and weight the utensils vary widely, some of the pots holding a few ounces only, while those intended for boiling the sap for maple-sugar have a capacity of several gallons. The largest are the wide shallow pans, four or five feet in diameter, employed as evaporating-pans at the natural salt-wells of Illinois and Kentucky.

Pottery of the Middle Atlantic and New England States.—The pottery of the Middle Atlantic States does not essentially differ, either in material, form, or decoration, from that of New England. In both sections it is rude in character, imperfectly burned, and ornamented by indentations or tracings with the finger or a pointed instrument, or by pressure with a cord. Vessels with handles or feet or with flat bottoms are very rare. Animal-shaped vessels are practically unknown.

Pottery of the Ohio Mounds.—The mounds of the Ohio Valley furnish an abundance of pottery of a better character. The vessels are of fine clay, and some of them have been worked pure, while with others the clay has been mixed with quartz and mica. Some present images of birds, quadrupeds, and the human form. Sometimes several vessels are

connected, making a complex arrangement. Handles and feet occasionally appear. The decoration is often in curved lines agreeable to the eye. (See Vol. I. *pl.* 39.)

Pottery of the Middle Valley of the Mississippi.—The pottery of the middle valley of the Mississippi was usually of clay mixed with shells. The vessels were often covered with a thick coating of black or red paint, vestiges of which are still visible. The sides of some of the jars are not more than an eighth of an inch in thickness. The pottery exhumed in Southern Missouri and Arkansas is usually black, and the jars have foot-like knobs to maintain them in the erect position.

Pottery of the Gulf States.—The specimens from the Gulf States prove that in this art the natives of that region were superior to their northern relatives. These specimens are more varied in form, symmetrical in shape, the composition fairly good, and the ornamentation diversified. Red, blue, yellow, and black clays were employed, and often without the admixture of any foreign substance. Many of the vessels were baked in kilns, the remains of which have been discovered. Some of the vessels have flat bottoms (*pl.* 6, *fig.* 53); others strong ears or handles (*fig.* 50); others pointed bottoms (*fig.* 49); all of which points are indicative of gradual improvement in the art. Even lids of baked clay were manufactured, fitting closely into the mouths of the vessels for which they were intended.

The ornamentation was imposed by moulding the rims, incising the clay, pressing designs into it, painting it in various colors, and occasionally by inserting into it, when moist, diamond-shaped and square or circular pieces of mica and shell.

Pottery of New Mexico and Arizona.—Several of the tribes of New Mexico and Arizona still manufacture pottery, and surprising quantities of fragments strew the soil of the valleys of the Gila and Little Colorado Rivers. These shards are often highly decorated and painted in various colors, exhibiting a style of workmanship differing from and surpassing that which prevailed on the eastern side of the Rocky Mountains.

Images and Pipes.—The ceramic industry of many of the tribes, both ancient and modern, extended beyond the manufacture of dishes and jars. Terra-cotta images have been exhumed in considerable numbers in the Ohio Valley and the States south of it. Professor Putnam obtained many such from an altar-mound in Southern Ohio. They were figurines some six or seven inches in length, neatly moulded, and not devoid of grace in position. Ornamented pipes in terra-cotta are also frequent, and were manufactured from the early Mound Period down to the advent of the whites. (See Vol I., *pl.* 38.)

Sun-dried Bricks.—The use of clay in the form of bricks for building purposes was wholly unknown in the Mississippi Valley and east of it. The instances which have been alleged to the contrary have not borne examination. Indeed, we may say the same of the whole area of which we are speaking; for the adobes or sun-dried bricks of the Pueblo Indians

are not really bricks, shaped and baked and then laid in the wall. They are formed upon the wall itself, in a manner closely similar to that in which the Thibetans raise their structures of dried mud.

3. BONE.

When Used.—The adoption of bone instead of stone seems to have taken place among early tribes only where stones suitable for implements were scarce or absent. This was not the case in any extended locality within the area of the United States, and hence bone implements are comparatively rare. Moreover, their organic structure rendered them more liable to decay and destruction than stone, which adds another reason for their absence. In New England they appear to be more common than elsewhere, and in some of the old shell-heaps of that locality they outnumber those of stone.

Implements and Utensils.—Fish-hooks of bone were in use among the Indians of the eastern coast, and are also not uncommon on the Pacific. An example of one from the State of New York is given on Plate 6 (*fig.* 16). Spoons or spatulas from flat bones, scapulæ, or ribs are occasionally found. It is possible that they were used in the manufacture of earthen vessels.

Sharpened fragments of bone, called "bone awls," not uncommon in the shell-heaps of the Atlantic coast, were doubtless perforators. Others, larger in size and less pointed, may have been affixed to the tips of arrows—a practice usual with many tribes of the continent. Some of these have lateral notches and barb-like projections.

Ornaments.—The teeth and claws of various species of animals were evidently in great demand as ornaments. They were usually perforated and worn on strings around the neck. Specimens of many of these have been exhumed from the Ohio mounds. (*Comp. fig.* 71, *pl.* 2, with Vol. I. *fig.* 2, *pl.* 40.)

4. SHELL.

The various univalve and bivalve shells of the rivers and ocean furnished a material of high value to primitive man, and one that he applied to a variety of uses.

How Employed.—In its natural condition a shell served him admirably as a drinking-cup, spoon, and dish; its sharp edge was a ready-made chisel, scraper, or knife; the women used it as a hoe to scratch their corn-patches; and the medicine-men employed it as a rattle in their exorcisms.

Wampum as a Currency.—The most important use of shell, however, was as a medium of exchange, as *money*. For this purpose *wampum* was manufactured with great industry all along the Atlantic coast, and circulated far into the interior. The shell most commonly employed was that of the clam, the white portion of which furnished the white, and the darker the black or blue wampum. With incredible labor these shells were

filed into segments about half an inch in length, which were perforated with flint awls and then strung on a cord, thus forming the so-called *strings* of wampum. A number of these woven together made the *belt*. (See Vol. I. *pl.* 36.) As a circulating medium it had a recognized value, and it was also extensively sought as a valued gift wherewith to ratify important transactions. (See Vol. I. pp. 79, 116, 124.)

West of the Rocky Mountains the shell known as the *Dentalium*, which has an aperture at both ends and can be strung without preparation, formed the currency. Specimens of it have been discovered as far east as the Ohio mounds. The Oregon tribes of to-day make use of various colored shells ground to an oval or nearly round shape.

Pearls obtained from the fresh-water mussel were eagerly collected by the Southern Indians. They were bored and strung like the wampum. These were also great favorites with the Mound-builders. From one mound in Ohio, Professor Putnam obtained the enormous number of sixty thousand such pearls.

Beads of Shells were arranged to form necklaces and to encircle the wrists and ankles. Some of these were perforated longitudinally, while others were disc-shaped, with the aperture in the centre. It is evident that at the period of their manufacture they were all highly polished, though many of them have been converted by the lapse of years into a soft, white, chalk-like substance. The column and walls of the *Strombus gigas* were frequently used in their preparation, and some of them still bear the trace of the natural canal of that univalve. Surprising numbers of these beads are found in the mounds of the Gulf States.

Shell Gorgets.—The most interesting of the uses to which shell was applied was in manufacturing gorgets. As we have seen (p. 73), these were generally of stone, but a certain number have been unearthed constructed of shell, and especially noticeable for the engravings which they bear. These represent the human face or figure, birds, heads of rattlesnakes, crosses, involuted lines, and arbitrary figures. They have been studied along with the whole topic of ancient American art in shell by Mr. William H. Holmes, the result of whose investigations is given in an instructive essay published by the U. S. Bureau of Ethnology. From this work we take several illustrations (*pl.* 6, *figs.* 28–30) representing the shell-products of the area of the United States. The most remarkable feature of some of the shell gorgets obtained from the Mississippi Valley is the unmistakable likeness the engravings upon them bear to designs from Yucatan. This is one of the few indications upon which we can rely in tracing the migrations and accounting for the disappearance of some of the tribes who dwelt in the Mississippi Valley at a time earlier than that of the Indians resident there at the period of its first exploration.

5. METALS.

The tribes of the locality of which we are speaking were acquainted at the epoch of the Discovery with a number of metals, but not with the

proper technical reduction of any of them. Specimens of gold, silver, iron, and copper have been found in both the older Mound series and the later deposits.

Copper has by far the pre-eminence. The Eskimos and other natives of British America possessed small pieces of it. These were principally derived from the vicinity of the Coppermine River on the North-west coast, whence they were disseminated both south and north. The copper there occurs in its native state, and may be hammered cold into various shapes. The tribes at the south, along the Pacific, prepare it in large thin sheets one or two feet square, which are a highly-valued medium of exchange among them.

Copper Implements have been unearthed in considerable numbers from the mounds of the Ohio Valley. These have the forms of celts, chisels, hatchet-blades, knives, arrow- and spear-heads, and ornaments. (See Vol. I. p. 97.) It would appear that the useful applications of this metal for tools and weapons obtained in the interior, while toward the eastern and southern coasts it was employed chiefly for decoration. This is easily explained, as the principal source of supply was the native copper deposits around Lake Superior. These were worked with great energy at a period long prehistoric, and when the whites began exploiting the region thousands of ancient diggings came to light, with the stone mauls and hearths of the ancient workmen, as we shall presently describe.

Nowhere within the area of the United States, however, was the art of smelting copper known to the aborigines. It was all hammered cold into plates, and these were laboriously cut with stone chisels into the shape desired. Moreover, even in the mound relics it is evident that this metal had not by any means risen to an equality with stone for producing a cutting edge. While the copper lance-heads will penetrate flesh and even soft wood, their points are at once turned by substances of the consistence of serpentine or gypsum.

Silver.—Native silver in small quantities is intermixed with the Lake Superior copper, and sometimes this was carefully hammered out and served to overlay ornaments. Specimens of meteoric iron employed in the same manner have been found in the Ohio mounds.

Gold was obtained from the auriferous sands of North Carolina and Georgia. Its quality was impure, but it early attracted the attention of the Spanish explorers. The natives hammered it into beads and similar small ornaments.

Ancient Mines.—In several parts of the United States the long-deserted works of the aboriginal miners—locally known as “Indian diggings”—testify to the expenditure of labor by the ancient inhabitants in the pursuit of metals such as they valued.

Thus in California it is evident that they penetrated the earth to a considerable distance in search of cinnabar, which they prized as a paint; in the mountains of North Carolina aboriginal diggings for mica are not only of considerable extent, but also show, from their locality, sagacity and

knowledge of the best qualities of the mineral on the part of those who worked the veins. Copper, however, was the metal which elicited their most laborious exertions. This was mined in Northern New Jersey, and, on a much more extended scale, in the islands and on the shores of Lake Superior.

The method employed at this latter locality was almost always surface-mining. A large basin-shaped cavity was excavated, following up the surface indications. These cavities were frequently from one hundred to one hundred and fifty feet in diameter, with a maximum depth of twenty-five feet. The refuse was either thrown out on the sides or back into the portion of the excavation already worked. There are no marks of cutting tools, but occasionally fire was called in aid to split the rocky matrix—never, however, to smelt the metallic product.

Quantities of the mining tools still remain under the refuse-heaps. They are principally stone mauls or sledges for breaking the matrix. Some of these are heavy, and present two grooves around the centre, as if they had been handled by the united strength of two men. One of them weighed thirty-six pounds. Most are fractured at the ends from use. The refuse was removed by shovels of cedar wood, and the water which accumulated in the excavations was baled out with bowls of the same material.

Such old diggings are seen at many localities of the Lake Superior mining region. That their antiquity is considerable is obvious from the fact that the later Indian inhabitants were quite ignorant of this industry, and had no notion as to the origin of the excavations. Moreover, the refuse-heaps are covered with a growth of trees in size and species wholly like the primeval forest around them. It is believed that the most recent date which can be assigned to the close of the native exploitation of these copper deposits is, therefore, as remote as six hundred or seven hundred years ago.

6. OTHER ANCIENT REMAINS.

Ancient Stone-Quarries.—While mines are necessarily rare, being confined to the limited deposits of native metals, quarries worked by the aborigines are numerous. These were excavated in search of a variety of stones—the slate and the catlinite for pipes, the flint or hornstone for arrow-heads, and the steatite or soapstone for bowls and vessels.

One of the most famous flint-quarries was at a locality now known as Flint Ridge, in the southern part of Licking county, Ohio. The ancient diggings are marked by pits two to six feet in depth, where the best veins of the mineral have been followed. The stone is not a true flint, but a species of hornstone. It flakes from a core in long symmetrical chips, and was admirably adapted to the manufacture of arrow- and lance-heads, knives, and similar instruments with a cutting edge or point. Hence it was widely esteemed, and must have been an article of traffic, for not only are weapons made of it found at a long distance from the locality,

but blocks of the stone, rudely chipped out and of a size convenient for carrying, have been discovered four hundred miles distant from the Ridge. (See p. 30.)

Still more extended quarrying operations were carried on for soapstone. Some of the largest excavations are in California, where several tribes formerly resident in the southern portion of the State appear to have been ignorant of pottery, or at least to have given the preference to vessels of steatite. Vast numbers of these, weighing in the aggregate many tons, have been taken from ancient graves in the vicinity of Santa Barbara. In the East native quarries have been examined and described in the States of Massachusetts, Connecticut, Rhode Island, New Jersey, Pennsylvania, Maryland, Virginia, the District of Columbia, and North Carolina. Most of them are easily recognizable by the abundance of broken and incomplete dishes and the presence of worn-out or abandoned tools. At one quarry ten acres of land were thickly strewn with these evidences of an ancient industrial activity. The diggings or quarry-holes are rarely more than five or six feet in depth, and are pretty sure to mark the spots where the largest and finest slabs of stone can be obtained.

Implements.—The quarry tools were generally composed of some hard and solid rock, such as basalt or syenite. They are of well-defined and various forms, and from their similarity in shape to implements now in use have received the names of mauls, axes, picks, and adzes. The mauls were evidently used in battering the rock, and are generally well worn at the ends. Many of the axes are double-ended, with the edges quite sharp, and were doubtless capable of doing good work. The picks are sharp-pointed and quite heavy, designed apparently for dressing the stone by pecking. The adzes appear to have been intended for cutting toward one, as the same instrument is with us, and some of them are so shaped that they were peculiarly adapted for cutting into the living rock and detaching masses of it without fissures.

Sepulchral Remains.—Among the most productive fields of archaeological investigations are the sepulchral monuments of the earlier possessors of the soil. We have before remarked (p. 42) that during the Palæolithic Period no methods of sepulture seem to have been in vogue. The sentiments which prompt to mortuary ceremonies were probably either not developed at all or not in a degree which would lead to the construction of any lasting monuments. In this regard neolithic man offers a sharp contrast to his predecessors. At no period in the life of the race has so much labor been devoted to perpetuating the memory of the deceased as in the early times of this later period. It would seem that the fatal fact of death then first impressed itself in its full force on the mind of man, and all labor seemed light which would in some measure blunt its sting and win a victory from the grave. Therefore, the industry of whole tribes was expended in raising great stones like the menhirs and dolmens (*pl.* 3, *fig.* 6), or huge mounds of earth, which should at once protect the

remains of the departed and stand as a perpetual memorial of his name and deeds.

Burial-Mounds.—These memorials are not less observable in the New than in the Old World. The latest researches go to show that the lofty mounds containing hundreds of thousands of cubic feet of earth which are met with in the Ohio Valley were heaped over the dead body of some chieftain. Those which the earlier investigators called "mounds of observation" or "signal mounds," on account of their position on some commanding eminence, have been shown to cover funeral pyres, and to be, in fact, sepulchral mounds. The Grave Creek mound, situated about twelve miles below Wheeling, West Virginia, was originally about eighty feet in height. A shaft sunk some years ago from the summit to the base revealed beyond a doubt that it was originally a funeral monument. The same is true of most of the other high conical mounds of the Ohio Valley and the Southern States; the lower quadrilateral and terraced mounds were thrown up as foundations for buildings. (See Vol. I. p. 215, *pl.* 39.)

Many of these burial-mounds are called "communal sepulchres." They contain the bones not of one person or of a few only, but of hundreds. A study of the mortuary customs of the later Indian tribes discloses their origin. It was usual for each gens of the tribe to have its own separate burial-place. The corpse was interred provisionally near the spot where the death took place, but at certain periods all these scattered remains were disinterred, and the bones cleaned and carried to the general tomb of the gens. With many tribes this tomb was constructed as a mound upon the surface of the ground, the remains being covered with the soil adjacent. (See *gens*, Vol. I. p. 135.)

Indian Graveyards.—Other tribes chose as their places of sepulture islands or river-meadows, where the earth was soft, and interred their dead in large graveyards. This mode prevailed on the northern Atlantic coast, and such "Indian graveyards" are still recognized on the banks of the Hudson and Delaware Rivers. Some of them cover six or eight acres of ground, and from the Indians' habit of depositing with the dead many weapons and utensils, these old graveyards have returned rich harvests to collectors.

Other Burials.—Other means of disposing of the dead were employed with equal formality. Some tribes, as the Nanticokes, never buried the bones, but preserved them in an ossuary, and when they moved their villages carried these sacred relics with them; others, as the Choc-taws, kept the bones in chests in their houses for a long time before depositing them in the earth; many tribes of the West placed the dead on scaffolds or suspended them on the branches of trees, a mode known as "aërial sepulture" (see Vol. I. *pl.* 37); while others sought out caverns or natural grottos, and made these the repositories of the bones of their ancestors. This latter custom prevailed to a certain extent among the ancient inhabitants of Tennessee and Kentucky, the widespread lime-

stone formations of that region offering numerous and suitable caverns for the purpose. The corpses found in them appear to have been mummified, and were subsequently wrapped in numerous folds of native cloth. This need not surprise us, as the early French writers on Louisiana tell us that several of the tribes who dwelt there were accustomed to mummify the bodies of their chiefs by drying them over a slow fire. In a remote part of the continent, Alaska, several tribes continued until a late day to swathe the corpse in numerous bandages and to deposit it in a cave. Probably in both cases some obscure belief in the resurrection of the body was what prompted to the custom, as we know was the case in Peru, where a like ceremony was carried out in much detail. (Comp. pp. 104, 135; see also Vol. I. *pl.* 50.)

Stone Coffins.—A noteworthy employment of stone by some tribes of the Mississippi Valley was as a material for coffins. From about the fortieth parallel southward, and especially in the State of Tennessee, this custom widely prevailed. A large flat stone was chosen as the base, similar ones for the sides and top, and smaller ones for the ends, of a rude cist. (Comp. *pl.* 3.) When the stones were not of proper sizes they were roughly hewn to fit. The coffin with its contents was placed in an excavation and covered with the soil, or it was laid upon the surface and the neighboring earth thrown around it. Sometimes several layers of the cists were placed one over the other, and the whole covered with soil, thus forming a mound; but more commonly they were placed separately in the earth. In some parts of Tennessee great numbers of these stone coffins have been unearthed, representing the dead of a large population or of many generations.

The coffins were constructed to suit the size of the bodies, and occasionally all the babes were placed in one part of the cemetery, apart from the adults. Their little sarcophagi gave foundation to the story repeated by various older writers of a race of pigmies having once inhabited that region.

The area of the stone coffin-makers extended into Northern Georgia, where in the Nacoochee Valley a number of these relics have been exhumed. Their antiquity is not extremely remote. In some of these stone coffins objects of European manufacture have been found, and this, although of rare occurrence, renders it certain that some at least of the tribe who had this custom were living on the spot after the Discovery. It may also be noted that the region where most of these relics have been found was far from being thickly peopled at the time of our first authentic accounts concerning it; therefore their origin may be considered an enigma which still awaits solution.

Shell-heaps.—The kitchen-middens of Denmark (see p. 42) have their exact parallels in the United States in similar piles of shells, bones, and other refuse which are found in great numbers along the Atlantic coast and the bays which indent it. These shell-heaps vary from one or two to fifteen feet in height, and sometimes are so extensive as to cover

ten or fifteen acres of land. They are composed of oyster, clam, conch, and turtle shells, and of fish-bones; occasionally they contain the bones of men and of other animals. Intermixed with these are numerous fragments of pottery, stone axes, chisels, awls, punches, arrow-heads, mortars, net-sinkers, beads, pipes, ornaments, and the other waste products of an aboriginal community.

Shell-mounds of another class, but similar in general character, occur along the banks of most of the fresh-water streams of the Southern States. They are largely composed of the shells of the fresh-water mussel, which was prized both as food and as yielding the pearls used for ornaments; these mounds are not less rich in relics than those of the coast. Neither of these classes, however, indicates an antiquity greater than that of the tribes of Indians resident in the localities at the period of the Discovery.

Textile Fabrics.—Among the relics exhumed from the mounds of the Ohio Valley the remains of a textile material bear witness to the comparative cultivation of the ancient people who constructed them. This material is commonly called "mound cloth." The fabric appears to be composed of some vegetable fibre which had been submitted to the processes of rotting and heckling similar to those still applied in the preparation of flax. The cloth is not merely plaited, as are many of the specimens from the lacustrine villages of Switzerland, but the thread is uniform in size and regularly spun, and the pieces were woven with a warp and woof. Several modes of weaving have been recognized; sometimes the warp and the woof intersect alternately, at other times the weft is wound around the warp.

This industry must have been active, for surprising quantities of this cloth have been found in the mounds, usually in a half-charred condition, as if it had been thrown in masses on the funeral pyre. From the specimens, the fabric was generally coarse, about like our sail-cloth. Occasionally remnants of fringes and tassels are visible. (Comp. pp. 46, 47, and *pl.* 4, *figs.* 54, 90.)

Spinning and Weaving.—The art of spinning and weaving, though not known to the northern tribes, was perfectly familiar to those who inhabited the Gulf States at the time of the settlement of the country. They employed a fibre obtained by rotting and heckling the stalks of the wild hemp, and occasionally animal fibre from the coarse hair of the buffalo. These they wove into rugs or mats and articles of clothing. They were dyed in brilliant colors and often ornamented with feathers. A similar industry is still retained by the tribes of New Mexico and Arizona.

Paints and Painting Materials.—The love of color, observable in some of the lower animals (see Vol. I. p. 119), is well marked in even the least cultivated tribes, and we find the mixing and applying of paints one of their prominent arts. Spread in varied designs and hues on the face and body, or displayed on skins and other articles of clothing, the colors

employed often had widely-recognized significations and marked the character and rank of the wearer. (See Vol. I. p. 124.)

The native Americans were acquainted with a wide range of paints and dyes, some derived from the vegetable, some from the mineral world. In the United States the blood-root, the sumac, the walnut, and the pokeberry were esteemed for their coloring juices; and the list could be much extended. The mineral kingdom offered especially the iron colors. They were obtained from nodules or from the colored clays, red, blue, or black, which crop out along the banks of various streams. The name "Paint Creek," applied to various streams in different States in the Union, is generally a reminder of the days when the native hunter was wont to repair to the banks of such streams in order to provide himself with the colored clays he esteemed so highly.

Mortars or Paint-Cups.—The clays, and the oxide of iron obtained from geodes or from other sources, were thoroughly triturated in small mortars, and often mixed with grease, so that they would remain longer on the surface to which they were applied. These mortars are known as "paint-cups." They were usually formed of a pebble from two to four inches in diameter, with a natural depression on one side, which was artificially enlarged by pecking. Small pestles for mixing the paint are found with them, and these are sometimes called "mullers;" but this name is more properly reserved for those broad and flat-bottomed stones which were used for triturating and rubbing the paint on a plane surface before it was mixed in the mortar. Such mullers will be found in almost all collections of stone implements from the Ohio Valley.

Small mortars or paint-cups of this character are very rare in New England, less so on the Atlantic coast to the south, and more frequent on the Pacific coast, especially in California, where the natives were acquainted also with the employment of cinnabar as a coloring material. Some of the paint-cups from the latter region are of serpentine or steatite, and are carved with great accuracy.

Rock-Paintings.—One of the subjects on which the native painters exercised their skill was the delineation, on the smooth surfaces of rocks, of various figures similar in design to the rock-inscriptions described on page 75. These rock-paintings were preferably in caverns or similar localities where they would be protected from the weather. Several have been discovered in the caves of Tennessee and Kentucky, and they are frequent in the dry mountain-ravines of Arizona, New Mexico, and Southern California. We may fairly assume that most of these drawings conveyed to the associates of the artist some definite meaning, which we may yet be able to ascertain by a study of the principles of pictography.

Colors on Pottery.—The colors given to pottery were either laid on after the firing, in which case they were often of vegetable origin, or they were produced by mixing colored clays with water to the consistence of a thin paste, which was then applied and burned with the body of the vessel.

B. ARCHÆOLOGY OF THE AREA OF MEXICO AND CENTRAL AMERICA.

Only the slightest relations have ever been observed between the ancient art of any portion of the United States and that of Mexico and Central America. We have noted (p. 80) the singular resemblance between some of the designs on shell-gorgetts found in Missouri and the remote sculptures of Yucatan. But the Pueblo-dwellers of the valley of the Gila do not owe their semi-civilization to the Aztecs, nor did the latter derive theirs in any degree from their northern neighbors.

The two principal civilized nations of this area were the Aztecs and other Nahuatl-speaking tribes in Mexico, Guatemala, and Nicaragua, and the Mayas and their related branches in Yucatan, Guatemala, Chiapas, and Tampico. There were, indeed, nations scarcely inferior to these, as the Tarascas and Zapotecs in Mexico, the Mangues in Nicaragua, the Chiriquis still farther to the south, and others; but it is likely that all these were in close communication for a long period, and borrowed much one from the other. Hence there is a certain similarity in the art-products of all, which, however, is far from being an identity.

There is no sufficient reason for assigning an extraordinary antiquity to the culture of this region, as some antiquaries have insisted. Wherever it shows a notable advance over that of the northern tribes, we may safely assign it to a date well within the Christian era. Nor need we search for some ancient nation or foreign influence to which to attribute it. The nations whose names we have mentioned developed it by slow degrees themselves, and as one gained some new point, the others learned it by the observation of traders or through the habit of adopting captives taken in war. The story of the Aztecs that their arts were derived from an ancient and extinct nation, the Toltecs, was purely mythical; no such nation ever existed.

All these tribes were familiar with copper and the precious metals; one or two of them knew the alloy bronze, but, for reasons already given (p. 55), they must still be assigned to the Stone Age.

I. ART IN STONE.

What chiefly distinguishes the stone implements of Mexico from those of the region north of it is the material employed. In Mexico, obsidian, and a fine variety of greenstone approaching true jade, were evidently the favorites. There are masses of obsidian in the Yellowstone Park and in New Mexico, and they were utilized in the native workshops; but their extent was limited, and an obsidian instrument is very rarely found in the Mississippi Valley or the regions east of it. Fine yellow and blue chalcedonies and porphyry were also sought for by the southern nations.

Arrow-, Spear-, and Sword-Points.—The bow and arrow and long lances were weapons in common use in this region, and the stone tips which were manufactured for their points are found in quantities. Some

of them, of quartz, flint, and chalcedony, are distinguished by very skilful chipping. The forms and sizes of these do not show, however, any broad contrast with the work of the North.

The Aztec sword was a formidable weapon. The handle and body of the blade were of wood, and in the edge sharp fragments or carefully-dressed points were inserted and fastened with gum. In this manner the sword was provided either with a saw-like or a sharp cutting edge.

Knives and Lancets.—The long and keen-edged obsidian flakes used as knives (*pl. 7, figs. 22–24*) are generally flat on one side, while on the other they present two planes meeting in an obtuse angle. This form was produced by the manner of splitting them from the nucleus or core of the raw material. Their edges are extremely sharp, but are easily blunted. They were in common use as razors even after the Conquest, and answered the purpose very well. What are called “sacrificial knives” are more elaborate, being carefully chipped from obsidian or flint; they are generally somewhat lozenge-shaped.

Single flakes of obsidian with a sharp point are usually known as “lancets.” The name is appropriate, as in many religious ceremonies the natives were wont to draw blood from various parts of the body by such lancets and by the sharp thorns of the maguey. It was a sacrificial act very common among them. These implements (*figs. 13–19*) served also as perforators and as small knives.

The supply of obsidian in Mexico is exhaustless, and its consumption was enormous. Numerous mines sunk by the ancient inhabitants in its deposits remain to testify of the extensive adaptations they devised for it. These are especially numerous near a volcanic hill called the *Cerro de Navajas*, or “Hill of Knives,” which has been termed the “Sheffield of ancient Mexico.” The refuse chips thrown aside by the workmen at this locality have been estimated at “hundreds of tons.” In the plains fragments of obsidian arrows and knives are to be found literally at every step.

Mortars, Pestles, and Clubs.—The mortar and pestle are much rarer in Mexican collections than in those from the North, a different method, described on page 73, prevailing for reducing the maize to flour. They occur, however, in the northern tier of Mexican States.

What is sometimes mistaken for a pestle is the stone war-club. It is longer, and one end is heavier than the other.

Sling-stones.—The sling, apparently quite unknown in the area of the United States, was a familiar weapon in Mexico and Central America. Some of the Mexican goatherds are still so skilful with it that they are said to guide their flocks by sending a stone to any wandering goat and hitting whichever horn they please. Two varieties of slings were used—the “ribbon-sling,” made of the aloe fibre; and the “stick-sling,” which was a stick about a yard long, to the extremity of which the stone was fastened.

As these stones were thrown with such accuracy, they could generally be recovered, and hence they were selected and prepared with careful

reference to size and weight. The Mexican sling-stones are discs of flint, obsidian, or other solid stone; sometimes they were of terra-cotta.

Manoplas.—A curious art-product in stone, peculiar perhaps to Eastern Mexico, is the so-called *manopla* (*pl.* 7, *figs.* 27, 28). It is apparently a representation of a fruit of some kind attached to a handle. Such figures, carved in wood, are in use to-day among the natives in their dances. By striking one against another they beat time to the movements of the feet. As this would soon destroy a *manopla* in stone, we may suppose that the latter was the symbolic or ceremonial representative of the actual instrument.

Metates or Mealing-stones.—Instead of the mortar and pestle, or the hand-hammer, which the northern tribes used for breaking the maize grains, the favorite implements throughout Mexico and Central America were the *metlatl* and the *metlapilli*, as they are called in the Nahuatl language—words which have become corrupted in the current dialect to *metate* and *metaltile*.

The *metlatl* is a curved stone having a broad smooth surface and resting on legs. It is usually of basalt, firm sandstone, or other hard substance. The *metlapilli* is also of stone, shaped like a rolling-pin. The maize is generally parched, then thrown on the *metlatl*, and crushed into a coarse flour with the roller, after which it is either baked in thin cakes or mixed with water and drank. Both these implements (*fig.* 9) are frequently ornamented with designs of various kinds.

Masks.—Examples of ancient masks (*figs.* 2, 3) in stone, wood, and terra-cotta are to be seen in considerable numbers in collections of Mexican and Central American antiquities. The inhabitants employed them in dramatic representations and in religious ceremonies, and sometimes placed them over the face of the dead on interment. Some are of brown lava, some of alabaster, while specimens are not rare which have been worked with infinite patience from such refractory minerals as obsidian, agate, jasper, and jade, occasionally in mosaic-work. They are generally concave on the back, so as to fit the face, but some are flat. It may be supposed that the latter were for funeral purposes.

Stone Mosaics.—From a technical point of view the height of Mexican lapidary skill was reached in mosaic-work. Various objects have come down to us incrustated with mosaic of turquoise, malachite, jade, agate, etc., cut and polished and fitted with extreme nicety. This would be a work of great labor, time, and cost in any country, and must have been especially so among a people to whom the use of iron was unknown. Yet the specimens of this art are so perfect that it would seem to have been long practised under the fostering care of wealth and power.

This mosaic was applied to the handles of knives and swords, to masks, cups, and similar objects. In one specimen (*fig.* 1) an incrustation of turquoise mosaic is placed upon the forehead, face, and jaws of a human skull.

Mirrors.—The ancient Aztecs paid much attention to personal appear-

ance, and small hand-mirrors were indispensable accessories of the toilet. These were generally circular, about four or five inches in diameter, and manufactured either of obsidian or of iron pyrites. Both these minerals bear a high polish, and the specimens which have been preserved reflect objects in a satisfactory manner. Some of them are perforated at the top or back, apparently to adapt them for carrying on the person.

Articles of Ornament.—Stone beads of obsidian, green jade, serpentine, lava, etc. occur over the whole region which occupies us. Rings for the fingers were also manufactured. A characteristic decoration is the *tentell*, the lip-stone or labial. It is of the shape of a large shirt-stud, and was worn in an aperture in the lower lip, while others nearly similar in form were inserted into perforations of the lobe of the ear.

Ceremonial and Religious Objects.—In all collections of antiquities from this part of the continent there are numerous perforated idols, figures, and pendants with designs and symbols which were worn as amulets. One of the most common varieties is a heart-shaped stone, while the material most prized for the purpose was the green jade, called in Nahuatl *chalchihuitl*. From this word all specimens of such ornaments are known in Mexico as *chalchihuites*. Many of them have been discovered in the provinces of Mexico, in Honduras, and in Costa Rica, displaying highly curious engravings and a remarkable perfection of the glyptic art. The one portrayed on Plate 7 (*fig.* 26) was obtained at Ocosingo, Central America. It is four inches long by two and three-tenths broad, and about half an inch in average thickness. The face is sculptured in low relief with the figure of a divinity seated on a carved stool, his left hand resting on his thigh and his right raised to his breast. The face is in profile, showing the salient nose and conventional receding forehead that characterize most Central American sculptures. The back of the object is pierced with a hole, so that it might be suspended by a cord.

Beautifully worked ceremonial objects in flint have been obtained from Honduras. Two of these are represented in Figures 20 and 21. One is a serrated weapon sixteen and a half inches long, pointed at both ends. The other is in the form of a crescent with projecting ends. Its greatest length is seventeen inches. Both are chipped with extraordinary regularity and skill. They are preserved in the Blackmore Museum, England.

Sculptured Stone Collars.—These form a remarkable class of specimens obtained either from Mexico or from the Greater Antilles. They are of the shape of an ox-yoke, are cut from a solid block of stone, and are often elaborately ornamented with designs in relief (*figs.* 12, 29). It is not certainly known to what purpose they were applied; but from some of the ancient paintings it has been surmised that they were placed over the victim on the sacrificial altar to aid in keeping him in position when the chief priest performed the solemn rite of opening the breast with the sacrificial knife, tearing out the heart and presenting it to the god.

Statuary.—The Mexican artists carved stone in low and high relief, and occasionally attempted to reproduce entire figures of men, animals,

and plants. One of these is shown on Plate 7 (*fig. 47*). In the district near Tampico—which, according to one of their traditions, was the point where their ancestors first landed—some rude limestone statues have been preserved. Finer specimens of work have been discovered in the interior and farther south. Probably the most creditable of them all is one supposed to represent an Aztec priestess, a front view of which is given in Figure 11. It is of extremely hard basaltic porphyry, and the expression is well rendered.

Although such a specimen as this stands at the highest level of American art, a general comparison shows that as a rule the Nahuatl sculpture is not of so high an order nor of so frequent occurrence as that of the Maya tribes who dwelt in Chiapas and Yucatan. Much of this is purely architectural in character, and will be described elsewhere in this work (see Vol. IV.); but there are also single figures, carved almost clear of the matrix, sometimes simple and almost nude, at other times with an extraordinarily elaborate and probably symbolic costume. An example of each is given in Figures 10 and 32. The former represents the statue called Chac Mol, unearthed by Dr. Le Plongeon at Chichen Itza, Yucatan, in 1875. The latter is an idol from Copan.

Rather rude, but nevertheless large and impressive, stone figures have been exhumed on the islands in Lake Nicaragua. They were probably of Mexican inspiration, as there was a Nahuatl-speaking colony in that region at the date of the Spanish conquest. One of these is represented in Figure 25, another in Figure 30. (Comp. Vol. I. *pl. 42, figs. 7, 8.*)

Rock-Sculptures.—Large figures inscribed on the faces of almost inaccessible rocks are mentioned by travellers as occurring in various parts of Mexico, but we lack accurate delineations of them. At the extreme south of the continent, in Nicaragua and near Chiriqui in Veraguas, scientific explorers have copied a number of such inscriptions of a related character. They present curved lines with intricate convolutions and some of those cup-shaped depressions which we have noted (*p. 76*) in Ohio. Their striking resemblance to similar designs on rocks in Northumberland, England, has led to curious theories as to their origin. The care with which they have been carved and their evident uniformity of plan prove that they were not the aimless products of idle hours, but conveyed some meaning which was worth the expenditure of much labor by those who made them. (Comp. *pl. 43, Vol. I.*)

2. METALS.

The metals known to these nations were gold, silver, copper, lead, tin, and the alloy bronze. They were more or less acquainted with the reduction, smelting, and casting of these, and employed them both in the arts of utility and in those of pleasure (see Vol. I. pp. 97, 119) where they were suitable. As the most important in its industrial aspect, we shall begin with

Bronze.—The use of this alloy by the Mexicans—to whom the know-

ledge of it was practically confined, for it continued to be little more than a curiosity to the Central American tribes—appears to have been almost limited to the manufacture of hatchets and chisels. Lance- and arrow-heads are indeed not rare, but the use of obsidian for such purposes vastly preponderated.

The proportion of tin to copper in Mexican bronze is generally somewhat less than in the bronze of the Old World. The latter, as a rule, is ten per cent. of tin to ninety of copper, but in Mexico eight per cent. of tin was the maximum, and two to five per cent. the ordinary amount. This mixture, however, rendered the tools sufficiently sharp to cut the softer woods with facility.

Bronze Implements.—Two forms of bronze axes prevail in collections of Mexican antiquities, the one resembling in outline the celt of the Stone Age, the other with an expanding and curved cutting edge. Another very frequent form, probably a knife, is known as the *tau* (*pl.* 7, *fig.* 7), from its similarity to the Greek letter T. Chisels of bronze are very rare (*fig.* 6). The question has been discussed whether the engraving on stone was accomplished by the aid of stone or bronze tools; but the extreme scarcity of bronze tools adapted for this purpose, and their entire absence in Yucatan, where the art of the stonecutter was most successfully prosecuted, render it almost certain that stone chisels alone were applied in this direction.

Other articles in bronze occasionally seen are nails, punches, adzes, and bells. The latter are abundant in collections. They do not have a suspended clapper, but are similar to our sleigh-bells, the sound being produced by a ball of metal enclosed in a hollow casing.

Copper was applied to the same purposes as bronze, and it is doubtful if the Mexicans esteemed the latter more than the former, or understood its superiority for many industrial tools.

Gold was collected in the southern provinces of Montezuma's empire, and in rather large quantities if we may depend upon the statements of the early conquerors. (See Vol. I. p. 118.) Thus, when Cortes demanded a tribute of this precious metal, he obtained within twenty days the value of six hundred thousand crowns. The ornaments manufactured of it were head-bands, circlets for the head, beads, collars, and small figures as amulets.

In Yucatan, a level country without metallic deposits, neither gold nor any of the metals occurred except as imported specimens, chiefly ornaments and in small quantities. Copper, silver, and gold were all known and prized in Guatemala, but as ornaments only. Farther south gold becomes more plentiful, and numerous interesting specimens (for example, *fig.* 31) have in recent years been obtained from the native graves at Chiriqui in Veraguas, on the Isthmus of Darien. Most of these were gold ornaments which had been worn by the person buried. They usually represent some human or animal figure, though square, oblong, triangular, and circular plates are also met with. Nearly all the golden

figures are alloyed with copper. Some of the most pure are $21\frac{3}{8}$, and the least are not more than 11, carats fine. The alloy employed was not native, but was prepared artificially. The objects were cast, and some were finished by hammering. Others were prepared by imposing a gold thread on a plate of the same metal, the plate giving the background and the thread the figure desired in very low relief.

3. POTTERY.

Technical Method and Quality.—All the Nahuatl nations were skilful potters, and manufactured vast quantities of ware, as the innumerable fragments scattered over the plains remain to testify. It varied greatly in quality, that which was designed for common domestic use being coarse and of clay mixed with gravel and fragments of stone, while the finer articles were of entirely pure clay, carefully worked and moulded with great skill. Different colored clays were employed, and although no example has been produced where the colors on an object were obtained by employing *pâtes* of different hues in the walls, the method of *appliqué*-work, where figures separately moulded and sometimes of varied colors are attached to the vessel while moist and burned with it, was perfectly familiar. Sometimes as many as twenty such figures are imposed upon one vessel.

Color.—The prevailing tint is brown or black, but that which is finest and most highly prized by antiquaries is a bright red of fine even grain. Unfortunately, much of this is found in modern fraudulent imitations of the antique ware; it is said there is a village in the Valley of Mexico whose chief industry is the manufacture of these modern antiques for the market.

Various Forms.—Not a few of the Mexican vases present graceful outlines and symmetrical proportions. Their ornamentation is often elaborate, in some instances representing scenes from life, ancient costumes, head-dresses, etc. (*pl.* 7, *figs.* 33-36, 39-46).

In the vicinity of some of the ancient temple-sites small terra-cottas, chiefly representing the heads of men (*figs.* 4, 5) and animals, abound. Some of these portray artificial malformations of the human head, others show the prevailing national features, the modes of dressing the hair, and the popular ornaments.

Clay Masks (see p. 90) are also abundant. Some are half life-size, others larger than life. They are executed with great freedom and considerable artistic skill. Some of them have the features exaggerated into caricature with much spirit; others appear to be portraits of individuals, the latter not always portraying the traits of the red race.

Rattles.—Terra-cotta rattles are abundant in Mexican collections. Mr. Tylor says of them: "They have little balls in them which shake about, and they puzzled us as much as the apple dumpling did good King George, for we could not make out very easily how the balls got inside. They were probably attached very slightly to the walls, and so baked, and then detached."

Clay Musical Instruments.—Beads, spindle-whorls, and numerous other small articles were baked from clay; but one of the most interesting of the art-products in this substance is the class of musical instruments. These are found abundantly over Mexico and Central America, and recur in Peru. They are divided into musical jars, whistles (*pl. 7, figs. 37, 38*), and flutes. The first mentioned are somewhat spherical jars of various sizes, and so provided with canals and apertures that on blowing in the mouth-piece and closing one or more of the holes several musical notes, sometimes as many as six, can be produced. The whistle was a more simple instrument on the same plan, usually from two to three inches in length and in the form of some bird or animal. It is found occasionally in Mexico and Nicaragua, and abundantly in the Chiriqui graves on the Isthmus of Panama. The flutes are long and slender, and somewhat flattened, having an aperture for the mouth, and finger-holes. They yield soft musical notes, and in the hands of an adept would prove agreeable and effective instruments.

Mortuary Urns form an important portion of the relics of the potter's art. They were placed with the body for the spirit's use or they enclosed the cremated remains. To this custom we owe in the Old World the preservation of the celebrated Portland Vase, now in the British Museum, and in the New many scarce less interesting relics of a similar character.

Of these the peculiar "shoe-shaped" vessels (*fig. 34*) of Nicaragua are characteristic of that locality. They seem to have been modelled on the shape of the human foot, and sometimes are large enough to contain the whole body of an adult.

Technical Character.—The pottery from different localities in this area reveals marked differences in technical skill. In Mexico that from Cholula was most celebrated at the time of the Conquest. But some from South-eastern Mexico in the vicinity of Cempoallan surpasses it in finish. Many of the vases from the latter district present strong evidence that they were manufactured on a wheel. The colors are varied, laid on with skill, and resist time and a high temperature.

With reference to the pieces representing human or animal figures, both of which are exceedingly abundant, it is observed that the face and head have received most attention, while the body is neglected. A figure finished with equal care throughout is rare. Generally, there is visible a distinct effort to make some one trait or feature especially prominent, even to caricature. Very little sense of beauty is observable. The expression is usually jocular, comic, or extravagant, and the proportions of the parts untrue. Drapery is carelessly treated, but elaborate or fantastic head-dresses are detailed with singular minuteness. The obscenity so common and gross in the art of the Peruvians and of several other American nations is extremely rare in that of the Mexican and Central American peoples. These observations apply equally to figure-work in stone and metal.

4. BONE AND SHELL.

Utensils and Ornaments.—These substances do not occupy a prominent place in the antiquities of the region under consideration. Bone awls and whistles and rings of sea-shells are occasionally seen. The marine conch was utilized as a rattle and a horn, and for the latter purpose was a favorite war-trumpet. Pearls are rare, though they were regularly collected and paid as tribute in some provinces. A pointed bone, frequently represented in the picture-writings, appears to have been used by the Mexicans as a dagger.

5. PAPER.

Extent of Manufacture.—A very interesting topic in the Archæology of this region is the manufacture of *paper* and the uses to which it was applied. Nowhere else on the continent was this industry developed. In Mexico paper was produced in large quantities. According to the tribute-rolls of the ancient Mexican government, the different provinces were required to send to the capital *twenty-four thousand* reams or bundles (*resmas*) of paper every year for official use. Several cities have their names compounded with the Nahuatl word for paper, *amatl*, as though their principal business was connected with this staple.

Nor was the knowledge of it confined to Mexico. The Nahuatl colonies in Soconusco, Guatemala, and Nicaragua carried with them the methods of preparing this valuable product; not only did the Mayas of Yucatan make free use of it, but their distant relatives the Quiches and Cakchiquels in Guatemala and the Tzendals in Chiapas were familiar with it. Probably also it was not unknown to the Tarascas and Zapotecs, the former residents of the province of Michoacan, the latter on the Isthmus of Tehuantepec.

Method of Manufacture.—The method of paper manufacture was probably everywhere the same, although the obscure descriptions of the early Spanish explorers might lead us to suppose otherwise. The fibrous material employed was obtained from the leaves of the maguey-plant (*Agave Americana*). They were macerated and heckled like flax, and then pounded together, the fibres uniting by a process akin to felting. A surface was given to the fibrous sheets and greater coherence obtained by painting them with a solution of vegetable gum, which was rubbed smooth and white by polishing with a mineral substance. The sheets were from ten to twelve feet in length and from eight to ten inches wide. They were not rolled, but folded in a zigzag manner like a screen.

Each of the folds of the paper thus prepared for the market offered a page on which was painted whatever the scribe or, more properly, the artist wished to record. The plan of the Aztec and Maya writing has been discussed in Volume I. (pp. 93, 229), so we may confine ourselves here to its

Objective Appearance.—A considerable number of specimens of maguey

paper—which was in common use for a generation after the Conquest—have been preserved. The fibres are coarse, the texture is loose, and the color grayish. These peculiarities are in a measure due to the age of the specimens. The colors were evidently laid on with a brush, and often with a firm hand, denoting long practice. The hues have generally been well retained after several centuries of exposure. An Aztec or Maya book, with its leaves painted on both sides with strange characters in vivid colors, must when new have presented a striking appearance.

Purposes for which Paper was Employed.—It was used by these nations for many other purposes than bookmaking. The old writers inform us that on many occasions of ceremony, festivals, dramas, etc. it was employed for dressing and ornamenting the temples, idols, victims, priests, and performers. The nobles wore rosettes of paper on their foreheads, and parts of the clothing of all classes were of the same inexpensive material. The extraordinary and ample head-dresses which so frequently occur on the images in stone and pottery, and on the figures portrayed in the manuscripts, were probably of paper. As this substance could readily be cut into any desired form and painted with brilliant colors, nothing was better adapted for constructing cheap and effective decoration. (See Vol. I. p. 229, *pl.* 42.)

C. ARCHÆOLOGY OF THE AREA OF THE ANDEAN NATIONS.

In the valleys of the Andes, on the lofty plateaus which support their highest peaks, and on the western slopes which descend to the tropical shores of the Pacific, the first explorers came upon nations of a high degree of culture and with well-defined social institutions. These nations were not related in language, nor were they all under one government, but their partial civilization presented many common traits. Most of them, moreover, did acknowledge the authority of the Incas, a powerful family which for several centuries had ruled the Quichuas and Aymaras, and which had extended their power from the frontier of the savage Araucanians in Chili to Quito, and beyond into the Colombian valleys. Here they almost encountered, but probably did not reach, the Chibchas or Muyscas, a people in some respects equally advanced.

This South American culture appears to have been indigenous. It took its rise in the lofty and secluded valleys of the Andes and around the shores of Lake Titicaca and Lake Guatavita, and was in no wise indebted to the culture of Mexico and Central America, nor, as some have maintained, to the civilization of any part of the Old World. Nor, on the other hand, did its influence reach the Isthmus of Panama. There has never been demonstrated any affiliation of culture or language between the semi-civilized tribes of North America and those of South America. The Caribs alone, bold warriors and daring navigators, familiar with the device of sails and venturing without hesitation on distant voyages, appear to have followed up the eastern coast from the shores of the Caribbean

Sea as far as to the northern coast of Yucatan, and perhaps to the mouth of the Usumasinta River.

I. ART IN STONE.

Arrow- and Spear-heads.—A remarkable scarcity of objects of this class is noted in collections from the Andean region. Some very competent archæologists have maintained that the Peruvian nations did not know the use of the bow and arrow. This is not entirely correct, as there are some arrow-heads of milky quartz in the British Museum, still fastened to their shafts by strands of alpaca wool, which were obtained from ancient graves near Molle, Peru. They are, however, rare, and it is certain that the Peruvian warriors in their combats preferred slings and clubs or maces to bows and arrows. They also had large sword-like weapons of hard wood, slightly curved and brought to an edge by sharpening on each side of the blade.

Perforated Stones.—These are perhaps the most characteristic stone implements of the Andean region. They are found in great numbers and of all sizes, some being no larger than an acorn, others weighing from eight to ten pounds each. Archæologists have been puzzled to define their various uses. They are generally disk-shaped or globular, and the hole is worked directly through the centre (*pl.* 8, *figs.* 9, 10). That some of them are spindle-whorls seems established by a specimen in the Blackmore Museum—a spindle with a stone spindle-whorl still attached to it, and having some of the spun alpaca wool around the stick; but this is in all likelihood a modern specimen. The smallest examples may have been amulets, pendants, or beads. Some of the larger were doubtless heads for war-clubs, while the heaviest may have been used as weights attached to the handles of agricultural implements to enable them to penetrate the soil more deeply.

The finer examples of club-heads from Peru are of granite, and are in the shape of a star with five or six rays, reminding one of the *morgensterns* of the Germans.

Mortars.—On the Peruvian coast stones are scarce, and almost the only implement found is the mortar for crushing corn. Even this can scarcely be called a work of art, as it is generally a stone with a natural cavity deepened by use. In the interior are frequently found very fine mortars of red and green marble, basalt, and granite. Some of them have more than one compartment, are provided with sculptured handles, and ornamented with figures of animals. The technical method employed in excavating is visible on some incomplete specimens. A number of holes, like the alveoli of a wasp's nest, were drilled close together, and then, the intervening walls being broken down, the interior was polished by friction.

Vases.—By the same processes vases and dishes were prepared of the most resisting stones, such as basalt and trachyte. Small cups with handles, the diameter of the interior being not more than one or two inches,

are believed to have been used for holding the incense burned in religious ceremonies. Larger stone vases are rare, their place being supplied by pottery.

Seats and Stools.—The sculpture of seats and stools was a favorite branch of Peruvian industry. Many of these were upon blocks, boulders, or the sides of rocks in the open air. One, called "the Seat of the Princess" (*pl.* 8, *fig.* 3), is carved from the living rock at a famous ancient locality, Quonncacha. Another, which is movable, is shown in Figure 2. It is of hard sandstone, and represents a man on all-fours resting on a square slab and supporting a large, flat, and slightly curved stone, the seat of the stool. The modern Indians carve somewhat similar stools out of wood (*fig.* 1). (Comp. *pl.* 7, *fig.* 8.)

Sculpture.—In many parts of the upper Andean region, where stones of fine grain are abundant, the natives developed a surprisingly perfected technique in dressing them. Nowhere is this more manifest than in the ancient and enigmatical ruins which are strewn over the plain of Tiahuanuco on the shores of Lake Titicaca. Yet these are probably the oldest in Peru, and perhaps on the American continent. They had fallen to pieces, were deserted, and their history forgotten when first the Spaniards reached Peruvian soil. Yet to-day one of the most accomplished and cautious of American archæologists, Mr. E. G. Squier, writes of them in these words: "Remove the superstructures of the best-built edifices of our cities, and few, if any, would expose foundations laid with equal care, and none of them stones cut with such accuracy or so admirably fitted together. And I may say, once for all, carefully weighing my words, that in no part of the world have I seen stones cut with such mathematical precision and admirable skill as in Peru, and in no part of Peru are there any to surpass those which are scattered over the plain of Tiahuanuco." This precision is visible in the remaining walls of the ancient temples and palaces of Cuzco and in the various palaces and fortresses of the Inca territory; and this is a strong reason to confirm us in the belief that the ancestors of those who retained this surprising technical skill were the builders of the wondrous ruins on the now sterile shores of Lake Titicaca (see Vol. I. *pl.* 52). Some of their methods of cutting and fitting large stones are shown in Figure 21, and the celebrated monolithic gateway at the same locality is illustrated in Figure 22.

We might suppose that with the control over his material which such work indicates, the ancient artist would have succeeded well in his attempts to represent figures in stone. Such is not the case. Neither in relief nor when working in the round did he rise above a very low level of imitative art. The Peruvian bas-reliefs are simple *silhouettes*, cut in flat on a flat ground. Their outlines are geometrical and angular. When the effort was made to bring out the figure more strongly from the background, it was accomplished, not by incising the ground and rounding the figure, but by a series of plane cuttings, the borders of the figures thus presenting a number of little terraces or steps, each corresponding to

the prominence of some feature or member. The rare examples of Peruvian statues seemingly in the round prove on examination to be natural shapes which the artist had merely dressed into a rude semblance of the object desired. We thus see that he was inferior to the sculptors of Mexico and Yucatan.

There are a few specimens which would seem to be exceptions to the general accuracy of this opinion. They are confined to examples of the human face in reliefs attached to walls. We give from the volume of M. Wiener two illustrations (*pl.* 8, *figs.* 6, 8) which do the most credit to this branch of Peruvian art of any in his collection, and a representation of a large stone head (*fig.* 7) near Lake Titicaca.

The ancient nation who inhabited the region at the head-waters of the Magdalena River in the present United States of Colombia attained greater freedom in this direction than the Quichuas. Many large and curious stone images have been found there, carved with considerable expression and with a marked and varied individuality. They have a family likeness, being short and thick, between three and four feet high, and seem intended to strike terror to the observer. Those represented in Figures 12 and 13 are from the heights surrounding the valley of San Augustin in the locality mentioned, and are portrayed and described by Felipe Perez, in his *Jeografia de los Estados Unidos de Colombia* (Bogota, 1863). The tribe to whom these should be attributed is probably the Chibchas or Muyscas. Their principal seat was in the valley of Cundinamarca, but outlying branches of their stock were found as far north as the lake of Maracaybo and southward to the head-waters of the Magdalena River.

2. ART IN BONE, SHELL, AND WOOD.

Articles in Bone are not abundant in the Peruvian tombs, from which at present is obtained the largest variety of ancient art-products. The most curious are flutes constructed of the tibias of animals. Some of these are covered with designs wrought in low relief. Small articles resembling ear-picks, cut from small bones and ornamented with the heads of animals, are not uncommon. The images of animals worked from this material do not manifest much skill, and it evidently was not a favorite with the ancient artisans.

Articles in Shell.—The same may be said of shell. Although a fairly fine article of mother-of-pearl is collected along the coast, it does not seem to have recommended itself for designing, few worked objects in it having been found.

Articles of Wood in considerable numbers have been preserved in the dry caves and burial-chambers. They are utensils of household use, such as bowls, spoons, or spatulas, wooden mauls or hammers, instruments for spinning and weaving, etc.; arms, such as war-clubs, spears, and swords; and the tools of various trades. Some are plain, others sculptured and painted. Many small images of this material have been found. They

betray little artistic finish, and were probably either toys or amulets for the poorer classes.

3. METALS.

Gold.—The principal metals known to the Peruvians were gold, silver, and copper. Their greatest skill was displayed in the manipulation of gold. This was obtained principally by washing the sands of the mountain-streams. They not only knew how to hammer it into thin plates, and to weld these so that the line of union would be imperceptible, but they also understood how to smelt and cast it. Some of the vases still preserved offer fine examples of *repoussé*-work, while others display the art of imposing one metal on another, known as Damascus-work (*damasquinage*). It has been stated that they had a process of gilding, but it is the opinion of Von Tschudi and other competent antiquaries that this was nothing more than skilfully overlaying objects with gold-leaf hammered to extreme thinness. From such leaves they cut toys and ornaments, such as butterflies, etc., and imitations of the leaves of plants. Numerous small objects of gold, as beads, rings, and bracelets, are found in the tombs, and the nobles are said to have had their war-maces loaded with solid balls or stars of this metal.

Copper does not occur in the native state in Peru, and it is doubtful if the aborigines understood how to reduce it. That which was current in the country probably came from Northern Chili, where it is obtained in the native state.

Bronze.—The assertion is often made that the Peruvians manufactured bronze, but there is some doubt about this. No specimens of tin have been found in ancient graves, and the tools of a mixture of copper and tin, which certainly do appear in considerable numbers, are, in the opinion of Von Tschudi, the product of a native alloy. They also employed a mixture of copper with silex, which compound is said to be harder than the metal itself.

A low alloy of gold and copper, known as *champi*, served for the manufacture of an immense variety of objects, such as weapons, tools, rings, bracelets, pins, etc. Another alloy was of silver with lead, and some of the finest specimens of Peruvian castings are of this material. They are generally supposed to be of pure silver. Several examples of Peruvian works in metal are seen on Plate 8 (*figs.* 15, 16, 23).

Ornaments.—The metal-work of the Chibchas was principally in gold, with which the sands of the streams of their country abounded. It displays patience and a certain degree of skill in manipulating the metal, but no beauty of form. The products seen are usually small figurines, such as are represented on our Plate (*figs.* 24, 25) from the work of Señor Uricoechea.

4. POTTERY.

In some respects the ancient Peruvians were the most noteworthy potters on the continent. No other nation presented products with such diversity of forms, with such ingenious combinations, with such faithful

imitations. (See Vol. I. *pl.* 53.) These are, moreover, extremely abundant, and no museum of American antiquities is without its series of Peruvian *huacas*, as they are called.

Methods of Manufacture.—The natives employed clay of various colors, but, as it was generally mixed with powdered charcoal, ashes, or graphite as a siccative, the specimens are mostly brown or black, except when superficially colored. In common ware chopped maize-leaves were mixed with the clay, and the charring of these gave the latter also a dark hue. The finest ware was often prepared with pounded mica or shells as the siccative. Gold-dust was sometimes added to give a brilliant reflection.

In some localities the pottery was sun-dried; generally it was fire-burned, the fuel being dried dung, which was placed around the clay object and excited to intense heat by blowing with long tubes.

Coloring was accomplished by various devices. Mineral colors were mixed with earth to the proper fluidity, and then laid on the moist vessel with a brush or spatula. At other times the painting was in vegetable colors after the firing was completed.

Decoration was largely conventional. It is evident from existing specimens that moulds or stamps in wood, pottery, or stone were employed to impress various designs on the clay. Those designs represent lozenges, squares, and other dispositions of straight lines, the serpent, birds, stars, and the human face. They have little expression, and probably conveyed no recondite meaning.

Potter's Wheel.—Some antiquaries insist that the Peruvians employed the potter's wheel. The concave and circularly striated bases of some of the *huacas* seem to indicate this; so also do the extreme smallness of some vases, not an inch in height, and the great size of others, measuring nearly six feet from bottom to top, both sizes finished with perfectly symmetrical sides. This symmetry, it is maintained, could not have been achieved in any other manner than by rotation.

Diversity of Form.—An astonishing diversity in form prevails, and evidently the ancient artists vied with one another in their efforts to turn out novel figures. Many of the vessels are double, as we also saw in North America in the Ohio Valley (p. 78); others have double spouts, like the "monkey" in use among our own farmers. Many are modelled from melons, gourds, and fruits. Representations of animals abound, and almost the whole of the Peruvian fauna can be exhibited in the ancient jars. They represent quite accurately the duck, parrot, pelican, turkey, turtle, monkey, lynx, otter, llama, toad, cayman, shark, condor, etc.

The diversity of form and the skill in workmanship displayed in the ceramics of the ancient Peruvians are well illustrated in the series of vases on Plate 8 (*figs.* 35-38, 40, 41).

Imitations of the Human Form.—Equally abundant are the representations of a part or the whole of the human figure. Whole figures in the

nude are rare, and are always repulsive and coarse. Generally, the features are caricatures and the expression is ludicrous or ignoble. A few are of simple and graceful forms, and here and there may be discovered a face which is dignified and impressive. The external decoration occasionally depicts scenes in life which are instructive as to ancient manners.

Musical Instruments.—Whistling and musical jars, rattles, and similar articles constitute a prominent feature in Peruvian ware; but it does not appear that musical instruments equal to those of the natives of Nicaragua and Mexico were produced from this material.

Sacred Vessels.—The vessels found in the tombs are usually of a sacred character, and were destined to receive the *chicha*, a drink made from maize and employed in ceremonies. They often have an enlarged neck near the handle, with a hole for pouring out the liquid, and an opposite opening through which the air escapes while the vessel is being filled. Many are double; others are quadruple or sextuple, or even octuple; that is, the principal vessel is surrounded with regular appendages which communicate among themselves and with the principal vessel. Some of these double vessels while they are being filled with fluid emit from the air-holes gurgling and other sounds which a sufficiently strong imagination can assimilate to the voice of the animal represented by the principal part of the vessel.

5. OTHER ARTS.

Textile Fabrics.—The Peruvians were well acquainted with spinning and weaving. Both animal and vegetable tissues were employed, and fine as well as coarse stuffs were in common use as clothing.

They cultivated in the warm valleys of the coast two varieties of cotton—one pure white, the other grayish. The animal fibres were obtained from the four species of American camels indigenous to their country, of which two, the llama and the alpaca, were domesticated, while the others, the huanaco and the vicuña, were in the savage state. The finest of the cloths were woven from the hair of the vicuña, and were reserved for members of the Inca family and for those nobles who as a special favor were permitted to wear them.

Dyes and Decorations.—The dyes were numerous, and the coloring-matter was so permanent that after centuries of exposure in the tombs many pieces of the so-called mummy-cloth come forth bright and clear. This is especially true of the animal fibre. Analysis has shown that all the colors employed by the ancient dyers were derived from the vegetable kingdom.

The decoration of the textile materials was generally in geometrical patterns, and where figures of men or animals are represented, their outlines are in similar straight lines. Occasionally the figures bear a deceptive resemblance to alphabetic characters, but the illusion is dispelled on close examination.

Quipus.—Twisted cords and strings were the substitutes of the Peruvians for the picture-writing of the northern nations. Their celebrated

quipus were formed by attaching to a base cord a number of strings of different thicknesses, colors, and lengths. These were knotted together or plaited. Each of these characters had a definite meaning applicable to the subject to which the quipu referred. Specimens of these are now rare, and the secret of interpreting them appears to have perished soon after the Conquest. (See Vol. I. pp. 90, 231, *pl.* 53.)

Leather.—The art of tanning was unknown in this region, but the skins of animals were prepared by a process which imparted to them considerable durability, and pieces of such leather are not unfrequently exhumed from tombs. The hides were placed in large vases filled with urine and buried in moist earth. After a time they were taken out, dried, and beaten.

Tombs and Mummies.—Although the study of the Peruvian mummies belongs rather to Anthropology (see Vol. I. pp. 132, 232) than to Archæology, we may mention them here, as they form an indispensable adjunct to every collection of the antiquities of that country. They are exceedingly numerous, and doubtless hundreds of thousands of them yet remain undisturbed in their carefully-concealed sepulchral chambers. The Peruvians were, like the ancient Egyptians, believers in the resurrection of the body in its most literal sense; they therefore wished to preserve it in the most complete manner possible. It is said that they even gathered up and had buried with them the parings of their nails and the hairs which fell from their heads, so that they should lose in the future life no part of their personality. This induced them also to seek out the most inaccessible spots for burial, or to construct solid stone towers, called *chulpas* (*pl.* 8, *fig.* 29), or to sink vaults deep under ground, in which the remains should be deposited as free as possible from danger of desecration. Sometimes the burial-caves which abound in the upper Andes can be reached only by descending the face of a perpendicular precipice a hundred feet or more by means of ropes. (Comp. pp. 85, 137.)

In more ancient days, before the mason's art had been cultivated, rock-sepulchres were erected almost precisely similar to the dolmens (*pl.* 3, *fig.* 1) which the early neolithic inhabitants of Europe were wont to rear for the common burial-places of their tribes. One such, from the Peruvian uplands, is represented on Plate 8 (*fig.* 28).

D. ARCHÆOLOGY OF THE AREA OF SOUTHERN AND EASTERN SOUTH AMERICA AND THE WEST INDIAN ARCHIPELAGO.

Naturalists have ascertained that the fauna and flora of the West Indies were derived from South America, and perhaps this indicates that at some remote period this archipelago formed an integral part of the southern continent. Ethnological and linguistic investigations show that the human population of the islands followed on the tracks of the other organic forms, and migrated from the mainland at the south. At the time of the Discovery the natives of every island of the group were affined solely to

the tribes of the southern shore of the Caribbean Sea. They were partly connected with the tribe from which that sea derived its name, the redoubtable Caribs, partly with the more peaceful Arawacks of Guiana. For these reasons the Archæology of the West Indies forms part of that of South America.

The whole of this latter continent, outside of the Andean area which we have just considered, was at the period of the Discovery, and for all time anterior to that since it had been peopled at all, in the possession of tribes far inferior in culture to the Peruvians. No relics comparable to those in the Andean valleys have been discovered in the Pampas of the south, in the vast watersheds of the Amazon and the Orinoco, or in the forests of Guiana.

On the other hand, the northern coast, and especially the West India Islands, do not offer any traces of those rude and characteristic implements which denote the presence of man in the Palæolithic Age, although such relics have been diligently sought by earnest investigators. The inference is that those portions had no human population until man had reached the Neolithic Period of his development. We have already seen (p. 66) that in the plains of the Pampas a race of men were contending with the rigors of the Ice Age at a time when many animals now extinct were their companions.

As the art of the whole of the vast region included in the area we are describing offers no great disparity, we shall consider it under one heading.

I. ART IN STONE.

As has been observed above, the West Indies yield no specimens of palæolithic implements. Indeed, their prevailing types of stone weapons and utensils are singularly fine in workmanship. Some antiquaries go so far as to say that the specimens from that locality are of a more elaborate and finished nature than those derived from almost any other people. This is exaggeration; but they certainly furnish many fine examples and some unique forms. They show an immense variety in shape and a considerable attempt at ornamentation, while the patience and skill evinced in working very hard stones into elaborate shapes are remarkable.

War-Clubs.—These are from ten to twenty inches in length, larger at one extremity than at the other, and frequently decorated with the head of some animal or of man. Illustrations of two from the island of St. Domingo are given on Plate 8 (*figs.* 32, 33). The material of which they are formed is a close-grained serpentine.

An utensil often worked into curious forms is the hand-hammer or pestle, such as we see represented in Figure 34. Many of the specimens have fantastic heads which also serve the purpose of handles.

Mammiform Stones and Collars.—Perhaps the two most puzzling forms of stone implements found in the West Indies are the "mammiform" or "cocked-hat" stones and the collars. The latter, as has been previously stated (p. 91), are also obtained in Mexico, where they are considered

by antiquaries to have been used in human sacrifices. They are still more abundant in the West Indies, and must have had some highly important application, as their manufacture involved a great deal of labor. They average about twenty inches in length by sixteen in width, external measurement, and are either oval or pear-shaped, the latter being more highly polished and richly ornamented than the former. The ornamentation and arrangement of the aperture indicate that they were intended to be worn, some on the right, others on the left shoulder.

The mammiform or "cocked-hat" stones (*pl.* 8, *figs.* 26, 27) are somewhat triangular in shape. They vary from five to ten inches in length and from two to four in width. The material is marble, greenstone, or some volcanic product. The base is usually rough, while the ends and top taper to points which are finished with elaborate care. Indeed, Professor Mason of Washington, in describing a series of them, pronounces them, with reference to elegance of design and variety of execution, as belonging to the highest type of sculptured stone implements in the world. Their use is entirely conjectural. Some consider them mullers for grinding paint; others suppose they were lashed to handles and used as the heads of war-clubs.

Bowls and Seats.—A stone bowl with rectangular and curved designs carved on its exterior is shown on our Plate (*fig.* 31). It may have been used as a mortar for beating up roots and fruits. Small stone tables, sometimes called "mealing-stones" (*fig.* 11), are not infrequent. They much resemble the Mexican *metlatl* (see p. 90). Their purpose, however, has led to some discussion. They also are much the same in form as the seats (*fig.* 2) manufactured of stone in Peru. Hence it is maintained by some writers that they were stone stools. Figure 4 is another form.

Jamaica Stones.—A very noteworthy class of antiquities from the West Indies are the so-called "Jamaica stones." They are obtained in considerable numbers exclusively from the island of Jamaica. They are long, narrow, rounded, and highly-polished chisels (*fig.* 5). They do not resemble specimens found on the mainland, but present a striking and curious similarity to a class of stone tools from Central France. Polished stone axes, with grooves or with their edges expanding into wings at the top, are also common in the West Indies.

Stone Implements in Guiana.—Passing to the northern shore of the continent, the stone relics are divided into a surface series and a series obtained from the shell-mounds which line the coasts. The latter are more ancient, of ruder manufacture, and in forms indicating that they are the art-products of a different people. It has been argued that these mounds were thrown up by wandering colonies of Caribs, who did not remain long enough to perfect their utensils. That the mounds are not of extremely remote antiquity is proved by the numerous fragments of coarse earthenware with which they are interspersed to the bottom, and by the species of shells of which they are composed.

The surface series consist of well-made axes and hatchets of various

patterns and knives and arrow-heads of flints. One of the characteristic utensils of this region is the broad, flat, and smooth baking-stone on which the natives cook their cassava bread. This is still in use, and is very highly prized.

The axes and hatchets are rarely grooved in the same manner as those commonly found in the United States (see p. 71); more frequently they have a notch cut on the opposite sides close to the heavier extremity. This served to fasten them firmly by a cord to the helve (*pl.* 8, *fig.* 14; comp. *pl.* 6, *figs.* 12, 13).

Stone Implements of Brazil.—Brazil presents few typical forms of stone implements, although it is probable that it is the only country on the continent where tribes are yet living in the undisturbed conditions of the Stone Age. Several such were encountered by the engineer Von den Steinen in 1884, while exploring the head-waters of the Shingku River in the department of Matto Grosso.

We must not omit to mention, however, the celebrated so-called "Amazon stones"—in the native tongue, *muira-kitan*. These are ornaments made of intensely hard crystalline rock, generally jade, feldspathic stone, or quartz. They have various forms: sometimes they are rough imitations of birds or beasts; often they are cylindrical beads two or three inches long and pierced with holes longitudinally. Similar ornaments are still made by some of the Indians of the Upper Rio Negro, where whole lifetimes are said to be employed in their preparation. On the main stream of the Amazon these stones are now rare, and the Indians, not understanding their manufacture, attribute to them a divine origin. Others say that they are formed of a stone which can be cut beneath the water, but which hardens the moment it is exposed to the air. They are valued curiosities in archæological collections from Brazil.

La Plata and the Pampas.—In the water-shed of the La Plata and throughout the Pampas there are abundant remains in stone which testify to the long residence of a population which depended on this material for the larger portion of its weapons and tools. Suitable stone was indeed scarce in many places, but wood was even scarcer on those boundless Pampas, and the aboriginal tribes must have made long journeys to collect the flint, agate, chalcedony, marble, and similar materials which they employed. In numerous localities the quantities of flint chips which the plough turns up testify to the site of some ancient workshop.

Forms of Weapons.—Of weapons the arrow-head is the most abundant. Its types are various: many specimens were worked by secondary chipping (see p. 31) on one side only, while the other remained in its natural state. This mode was a survival of that prevalent in the epoch of Moustier of the Palæolithic Period. It is no indication of a lack of skill in the ancient workmen, as there are also plenty of specimens which have both sides chipped, and even serrated, in a manner which would be creditable anywhere in the Neolithic Age.

Next to arrow-points, knives occur most freely. They also present

all the usual shapes—semilunar, semicircular, leaf- and dagger-shaped, etc.—as well as some odd forms not easily paralleled elsewhere. Axes and hatchets, on the other hand, are rare. We may explain this by the scarcity of wood on the Pampas, and the rarity of the occasions for working this material which would be presented to the natives. Equally rare are mortars and pestles. The Pampean Indians were grain-raisers to a very moderate extent and only in limited localities: hence they had no need for agricultural implements.

Utensils and Tools.—Utensils which appear to have been employed in cleaning and preparing skins are numerous. Such are the scrapers, oblong, circular, triangular, and of other contours; the polishers, stones of a size convenient to hold in the hand, one or both sides of which have been artificially smoothed and show signs of long attrition; and the punches and awls, from the simple sharp spicula of flint up to the delicately-chipped drill with a broad handle, designed for boring holes in the dressed hides and for joining them into garments.

Perforated stones, such as we have described (p. 98) from Peru, are not infrequent, though not so numerous as on the Pacific slope. Many are rough or simply rounded, while occasionally they are elaborately worked into the shape of a star.

Bola.—But the most characteristic of all the Pampean stone implements is the *bola* (*pl.* 8, *figs.* 19, 20), the weapon of war which the Pampean tribes preferred to all others. It is a stone, generally globular or ovoid in shape, which they fastened to the end of a long rawhide cord. Grasping the cord a few feet from the stone, they whirled it rapidly a few times around the head, and then loosing their hold threw it with surprising force and accuracy of aim. The bola is usually of some hard mineral, granite, diorite, porphyry, or mica-schist. Sometimes it has a groove around its centre to which the cord is attached. Some specimens are perfect spheres wrought with astonishing accuracy and polished to the utmost. Others are traversed with grooves at regular intervals. In rare instances the sides are cut into facets of symmetrical shapes.

Chilian Tribes.—Crossing the Andean chain into Chili, where from the earliest historic times the warlike Araucanians held sway and still in a measure maintain their independence, we meet a degree of culture rather higher than that of the Pampean tribes. There is little doubt that this is to be considered a reflex of the ancient civilization of the Incas, who for generations before the Conquest had their eyes fixed with covetousness on the fertile plains of their southern neighbors.

Chilian Stone Implements.—The industry in stone of the ancient Chilians resembled in general character that of the Pampean tribes, as we might expect, inasmuch as they were distantly related. Collections from Chili are noticeable for the unusual number of perforated stones of the utmost diversity in material, size, and shape. What they could all have been used for the archæologists of that region have failed to explain. There are also many specimens in other respects similar to these perfo-

rated stones, only the cavities worked in the opposite sides do not penetrate entirely through the centre of the object. They are not wholly unlike the "chunky-stones" (see p. 73) of the Eastern United States. These are sometimes found in tombs in such a position that they must have been placed in the hand of the corpse at the interment.

Without pursuing in further detail the Chilian stone implements, we may mention a few forms very common there which are rare elsewhere on the continent. These are the implements (*pl.* 8, *figs.* 17, 18) employed in fishing and in net-making and mending. They occur in the mounds along the streams and the sea-shore. To find a parallel to them we must perhaps go to the far North, to the shores of the Great Lakes on the southern border of British America, where ancient tribes, also dependent on a fish diet, manufactured implements almost precisely similar.

A few rude stone idols are found in Chili. They indicate a talent not above the lowest plane of the statuary's art, and are comparable with those primitive efforts in the same direction which we noted (p. 75) in the Eastern United States.

In the manufacture of stone implements the Patagonians and Fuegians had, and still retain, a degree of skill equal to that possessed by their northern neighbors, as shown in the relics just described; but as their implements do not present any novel types, we may omit a detailed consideration of them.

Rock-Sculptures.—These occur in greatest number in the northern portions of South America, on the banks of the Upper Amazon and of the Orinoco, and in Guiana. Those in the latter country have from their number and character especially attracted the attention of travelers. They are of two classes—the one shallow, the other deep. The former always occur on comparatively large and smooth surfaces of rock, while the latter may be found on smaller detached fragments. The shallow figures are, as a rule, much the larger, and are always combinations of straight or curved lines in figures much more elaborate than those which are seen in the deep engravings. These latter depict the human form, monkeys, snakes, and other animals. The individual figures are small, averaging twelve to eighteen inches in length, but a number are often grouped. (See Vol. I. *pl.* 45.)

A celebrated rock-sculpture on the Rio Negro near the boundary of British Guiana represents a large and a small ship, both evidently of European build. This has led some writers to imagine that it records some ancient, pre-Columbian voyage to America, perhaps by the Carthaginians; while more sober authors see in it a proof that the habit of preserving the memory of important events by inscribing these large figures on the surface of rocks was retained by the natives after the first exploration of the country by the Spaniards; though it is true that at present even the recollection of such an art has wholly died out among the native population.

A number of similar rock-sculptures were described and figured by

Professor Hartt from the Rio Tocantins in Brazil and other localities on the affluents of the Amazon. They were engraved on a fine-grained, hard quartzite, the figures having been pecked into the surface by means of some blunt-pointed instrument. Some of them appear to be representations of the sun, moon, and stars; others of men, birds, and various animals of the forest. Circles, single or double, sometimes nucleated, spiral lines, and rayed heads, are also seen. The human figures are never drawn in profile—a trait which assimilates these etchings to the art-designs of the North American Indians; while Mr. Im Thurn, who has described the rock-sculptures (*pl.* 8, *fig.* 30) of Guiana, is of opinion that these latter have greater analogies with the forms of Mexican picture-writing.

Such inscriptions are rare in the southern portions of the continent, yet in Chili several have been noted. The most celebrated is one of considerable extent on the broad surface of a rock in the valley of Rapiantu, province of Santiago, Chili. The figures are rude, being single-line drawings of men, of animals, and of unknown objects. The style is different from that seen in Guiana. Some more carefully executed rock-drawings in the north of Chili, representing the sun, moon, etc., have been plausibly attributed to the artisans introduced by the conquests of the Incas.

2. POTTERY.

A knowledge of the art of pottery extended throughout the region we are describing, and must have been known from a very early date. The shell-mounds of evidently high antiquity which abound on the shores of the Atlantic and the Caribbean Sea contain, along with implements in bone and stone, fragments of earthenware. These are often very rude, but, as has been pointed out (p. 106), this fact does not necessarily signify that the tribes who formed these refuse-heaps were ignorant of anything better. They visited the shore only at certain seasons and as hunting-parties, and would bring with them merely their commonest and most indispensable ware.

Pottery of the Arawacks and Caribs.—Large urns or vases have been obtained from Barbadoes and other islands of the West Indies. From their shape and the character of the ware it is evident that the ancient natives of the islands practised this art very much as the Caribs and Arawacks do to-day, and with little difference in skill or in the prevailing designs of their products. The favorite shape is that of the "buck-pot" (*fig.* 39). It is not unlike an ordinary fish-globe, but has a wider lip or rim. Some of these are quite large, being two feet in diameter and two or three feet high. They are still used for containing beverages of different kinds. The best of these vessels are in appearance as perfect in shape and as truly curved as though made with the potter's wheel; yet they are formed by the hand alone, guided only by the eye, as has been proved by the observation of modern travelers. It is noteworthy that this form of the "buck-pot" is also common in the mounds of the Ohio Valley (p. 77), although in finish the latter are inferior to the Carib product.

Pottery in Brazil.—Most of the tribes on the Amazon and its tributaries were practical potters, though those who lived up the river must be given precedence for artistic skill over those near the coast. Both, however, turned out work which was superior to that of the tribes of Guiana and the West Indies. This superiority shows itself in texture, in contour, and in richness of decoration. The frequent imitations of the figures of animals and of the human body remind one of the designs of the Peruvian potters. (See Vol. I. *pl.* 53.) The finest examples are the *igasauas*, as they are locally termed. They are mortuary urns deposited in the graves of heroes, either to receive their bones after they had been cleansed of flesh or to lie beside their bodies. Two interesting specimens of these, both of undoubted antiquity, are represented in Figures 42 and 43 (*pl.* 8), and cannot fail to convey a favorable opinion of the skill of their makers.

Pottery of the Pampeas.—The Pampean tribes were likewise well acquainted with this art. The absence of wood and the scarcity of large stones rendered them more dependent on clay vessels than were the natives of other localities. The sites of their ancient villages are marked by surprising quantities of potshards. These indicate that the clay was usually tempered with sand and rather lightly burned, in some cases more on the interior than on the exterior of the vessel. This was doubtless accomplished by filling it with dried dung and then blowing the fire with tubes. The decorations are generally straight lines, though sometimes the human face or other objects are rudely outlined on the moist clay. Colored fragments attest that some vessels were painted in several colors. The forms are rarely graceful, and the vessels were generally small or medium in size. We do not find in the La Plata region specimens equalling the best furnished by the valley of the Amazon.

Pottery in Chili.—In Chili two distinct varieties of pottery are found, which the antiquaries of that country refer respectively to the Age of Stone and the Age of Bronze. But an examination of their forms and texture seems to show conclusively that they differ not so much in date as ethnically. The coarser and ruder is much like that of the Pampean tribes, while the finer betrays unmistakably the Peruvian characteristics. The one doubtless is of native Araucanian manufacture, while the other is the product of those colonies of more highly civilized peoples whom the Incas, in accordance with the well-known principles of their state policy, transported to the extreme south as soon as they had brought a portion of that region under subjection. (See Vol. I. *pl.* 52.)

3. METALS, BONE, AND SHELL.

Copper and Bronze Implements.—Nearly the whole of the region of which we are speaking is poor in metals. The only exception of importance is in Chili, where native copper occurs abundantly, the mines of which were exploited ages before the arrival of the whites. This doubtless was by Quichua colonies, as is indicated by the types of copper and bronze weapons exhumed. But they also occur in the graves of the

Araucanians, and must have come in moderate quantities into possession of that people. In his work on the antiquities of Chili, Señor Medina figures and describes hatchets and chisels of copper and bronze, pins and clasps of silver and gold, and idols of all these metals, some hammered from the natural metal, others smelted and cast.

Bone and Shell naturally assumed more industrial importance in localities, such as the West Indies, where marine shells of large size abounded, and in the Pampas, where both wood and stone were scarce. Specimens from those localities, however, do not offer any marked peculiarities of type.

GENERAL OBSERVATIONS ON AMERICAN ART.

In closing this review of the later art-products of the native tribes of the Western Hemisphere we may profitably take a general survey of their characters, their inspirations, and the position they occupy in the development of the æsthetic faculties of the species.

It will be obvious from what is contained in the preceding pages that in treating of the native Americans we have to do with a race of men possessing marked capacities for artistic culture and great fertility in technical methods. These traits, however, were not equally distributed. There are notable differences both in degree and manner of artistic expression. These differences cannot be explained merely by environment or social conditions. They are truly ethnic, and the more accurately they are brought into comparison with other ethnic peculiarities, as language, cranial form, corporeal build, and the like, the higher appears their value as ethnologic criteria. Their worth for this purpose increases as they advance from primitive simplicity to complexity and elaborateness, since it is well known that the very earliest art-productions present a strong similarity from whatever part of the world we take them. So true is this that in one celebrated example the coarse attempts of an awkward school-boy at drawing have been laid before the learned world as the mature products of a native American tribe, and this by a widely travelled and experienced observer (Domenech).

Decoration in Line.—The simplest of all artistic expression is shown in those straight markings which we see on the coarsely manufactured pottery of the Atlantic seaboard. The lines are vertical or oblique, and were produced by scratching the soft clay with the point of a stick. The first step in advance was to break these lines, thus forming simple rectilinear designs by the lines meeting at various angles. When two parallel lines were broken more than once at right angles in the same direction, they gave the fundamental type of the meander or Greek pattern. (See Vol. I. p. 122.) So natural a decoration is this that we find examples of it in the coarse pottery of the later New Jersey tribes. Elsewhere on the continent it was developed with great fertility of invention, and applied on a large scale to the decoration of buildings. Thus, on the walls of the celebrated palaces of Mitla, in Southern Mexico, there are more

than twenty different designs of these grecques. (See ARCHITECTURE, Vol. IV. *pl.* 19.)

The rectilinear scheme of design persisted very long, and maintained a supremacy among several of the most advanced nations down to the time of the Conquest. It is seen in its highest development in Peruvian work, as in the textile materials obtained from the celebrated cemetery of Ancon. These are woven with an abounding wealth of figures of men, plants, and animals, but all are portrayed by straight lines meeting at various angles. As has already been observed (*p.* 99), Peruvian work in stone betrays the same incomplete method governing the hand of the sculptor. The gold images of the Chibchas were evidently fashioned in obedience to the same rules, and examples in North America are frequent.

Decoration in Curve.—By some students of the development of art-forms, curvilinear designs are believed to be developments of those in right lines, the medium of transformation being the spiral, which partakes of the principles of both. This theory can scarcely find support in the natural history of American art. Curved lines are indeed more difficult to produce, and their lack of symmetry more readily strikes the eye, and hence they were less frequently employed by the earliest designers; but, independent of rectilinear figures, they have a well-marked series of evolutionary forms of their own, which deserve the closer attention because the predominance of one or the other system in a nation exercised a potent influence on its progress in all the arts of design.

Very simple circular designs on pottery were obtained by pressing on the soft clay the end of a hollow reed, and circular depressions by the pressure of the finger-tip. Representations of the human face by a circle with dots for the eyes and mouth, or of the sun with straight lines from the perimeter indicating the rays, are found in rock-sculptures of savage tribes. Concentric circles, scrolls, and spirals occur in abundance on the petroglyphs of Central America, which have been described on page 92. Elaborate curvilinear designs resembling arabesques and volutes were in use among the Mound-builders, and were favorites with the Maya artists of Yucatan. (Comp. Vol. I. *p.* 122.)

Cruciform Designs.—The simplest figure that can be formed by the union of two straight lines is the cross, and of its varieties the two simplest types are the tau T and the Greek cross +. Both of these recur very frequently in American art—sometimes, no doubt, almost accidentally and without fixed meaning, but certainly in the majority of cases with a distinct symbolic signification. Both the tau and the Greek cross are well-ascertained ideographs in the Aztec picture-writing, while on the Maya sculptures the latter is more frequent. In the Mississippi Valley engraved shells have been discovered which display these symbols as their central designs, and on the North-west coast the favorite form of the native copper money which they use is that of the tau.

The American cross is not always rectilinear. The convergent lines

may be slightly curved or their extremities terminate in spirals or convolutions. A celebrated monument known as the Cross of Copan, in Central America, is of this character, and it is repeated in principle on the famous Cross of Palenque and on some of the engraved shells from the Lower Mississippi Valley.

Decorative Figures.—The most frequent motives which the American artist chose were drawn from the animal world, either human or brute or composite. The absence of portraiture of inanimate objects is very marked throughout the continent. This has been explained by the supposition that the native American was in mind much like a child, who is impressed by what is in active movement and takes little notice of mere still life. But a weightier reason could be advanced; which is, that this absence of inanimate forms corresponds to a prevalent distinction in the structure of American languages between the animate and the inanimate gender, the former being the more noble and influencing more profoundly the forms of expression. This distinction, which took its rise at a very early and primitive period of the history of speech, exercised till the last a sway over the artist's conceptions of things, which led him to give constant prominence to animate objects and to certain inanimate ones which by the grammars of the different tongues were construed as animate.

Human Face and Figure.—The simplest of all expressions of the human form are seen in some of the rock-sculptures, where the refractory material induced the artist to economize his scheme to the utmost. The head and body are portrayed by a single straight line. A cross line represents the two arms, and at the same time serves to separate the head and neck from the body. Two straight lines branching from the body-line indicate the legs. It was an improvement on this representation of the human form when the face was shown as a circle, with dots for the eyes and mouth, and the body as an oval. (See Vol. I. *pls.* 43, 45.) From these elementary stages a gradual advance was made by the addition of details and the elaboration of the single features. The ears were outlined, the eyes defined by the addition of one or more concentric circles or ovals, brows were placed above them, and the chin brought into prominence by lines indicating its place and projection. Custom and tradition continued to exercise an iron sway over the genius of the artist. Scarcely anywhere in the Mississippi Valley or the regions adjacent do we find genuine ancient human figures drawn in profile; all are in full face. This is also true of those in the numerous rock-drawings of Guiana, the Orinoco, and the Amazon. On the other hand, the picture-writing, wall-paintings, and bas-reliefs of Mexico (Vol. I. *pl.* 42), Guatemala, and Yucatan prefer the profile for the human countenance. This marked contrast is not easily explained, but it is so decided that it serves as one of the arguments for the belief that some of the oldest shell-work of the Mississippi Valley was in some way influenced by Maya art-theories.

Expression.—Some of the human faces, especially those in terra-cotta

from Mexico, have so marked an individuality that it is the opinion of competent antiquaries that they were meant for portraits. Generally, the faces are more conventional, and not even ethnic in character. There is scarcely any attempt to display beauty of feature. The prevailing expressions are such as either to evoke mirth or to induce terror. For the former purpose caricature is often called in; some feature is greatly exaggerated, or else the face is smiling or convulsed with laughter. The Mexican masks (*pl.* 7, *figs.* 2, 3) are examples in point.

Proportion.—However carefully the face may be treated, the body is generally slighted. The artists evidently had very little sense of bodily symmetry and of the harmonies of organic proportion. It is doubtful if a single drawing or statue can be found in the whole range of American art which reveals a true conception of physical symmetry in its higher æsthetic sense, such as is seen even in the hastily-made Bœotian figurines from Tanagra.

The treatment of the nude is not delicate, but as a rule intentionally coarse. The sexual characters are so strongly marked that several writers have found in such portraiture support for their views that phallic worship was prevalent in ancient America. That there was a species of adoration of the reproductive principle in nature is evident from many facts, but most of the art-products which are supposed to refer to it were clearly only the conceptions of untamed, sometimes unnatural, lusts finding their expression in art.

Animal Forms.—The favorite forms from the lower species were those of the bird, the serpent, the spider, bugs, and fishes. The first two mentioned, the bird and the serpent, are equally common. They doubtless were associated in nearly all tribes with religious symbolism and social ranks. Forms of extinct animals, as the elephant, mastodon, etc., have from time to time been reported, but no example beyond the range of doubt can be adduced.

Inanimate Objects.—Occasionally boats, houses, articles of clothing, and implements are depicted, but these are seen rather in the picture-writing than in the works of art properly so called.

Scenes from Life.—It is remarked by Mr. W. H. Holmes that the engravings of the Mound-builders represent legendary creatures derived from the myths of the fathers, but are never illustrative of the customs and ceremonies of the people themselves, in this respect being similar to the designs of nearly all the native inhabitants of the area of the United States. In Mexico, Central America, and Peru, on the other hand, there are numerous sketches from life, if we may use the expression, representing the processes of trades, the ceremonies of religion and of state, and incidents from the lives of heroes and chieftains.

Inspiration of American Art.—From all this, and much more to the same effect which might be added, we must conclude that the inspiration of American art was derived altogether from the real, and the real in its narrowest and most literal sense. Nowhere do we perceive traces of an

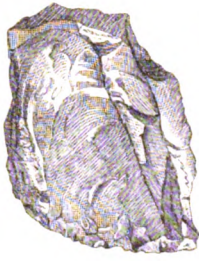
aspiration for something beyond the present, for conditions of existence which are incommensurate with, because loftier than, material things. Ideal beauty, organic harmony, universal truths bodied forth in proportion and expression,—all these were undreamed of by the American race, and are not hinted at in its ripest productions; yet they were familiar to Greece when its general culture was scarcely higher than that of ancient Mexico or Peru, and are visible even in the older and coarser products of the early Egyptian dynasties.

CONCLUDING REMARKS.

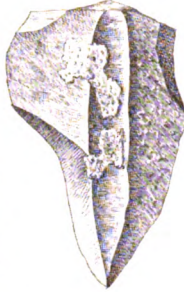
From this survey of the progress of man in both hemispheres, from his earliest appearance on the globe down to the commencement of written history, we learn that he began in faculties and resources scarcely above the level of the higher brutes, and in many of his powers and senses inferior to them. Possessed, however, of a potentiality of growth which knew no limits, he steadily though slowly extended his conquests over Nature and trained his mental abilities until he became superior to all other animals and sole chief of the organic world. This he accomplished by cultivating the different elements which, as has been shown at length in the previous volume, make up the sum of what we call Civilization. The lesson taught by Prehistoric Archæology is that this progress began at man's first appearance, and continued step by step throughout all those unnumbered centuries which lie anterior to the dawn of History.



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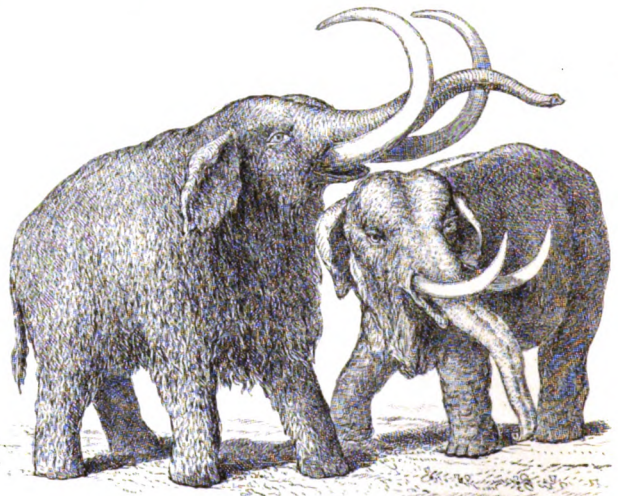
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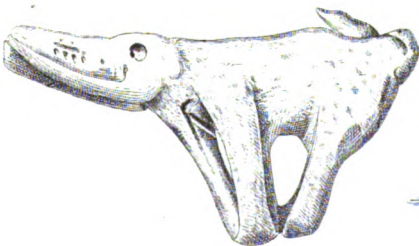


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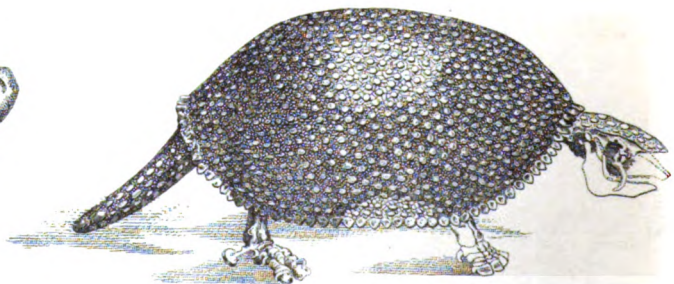


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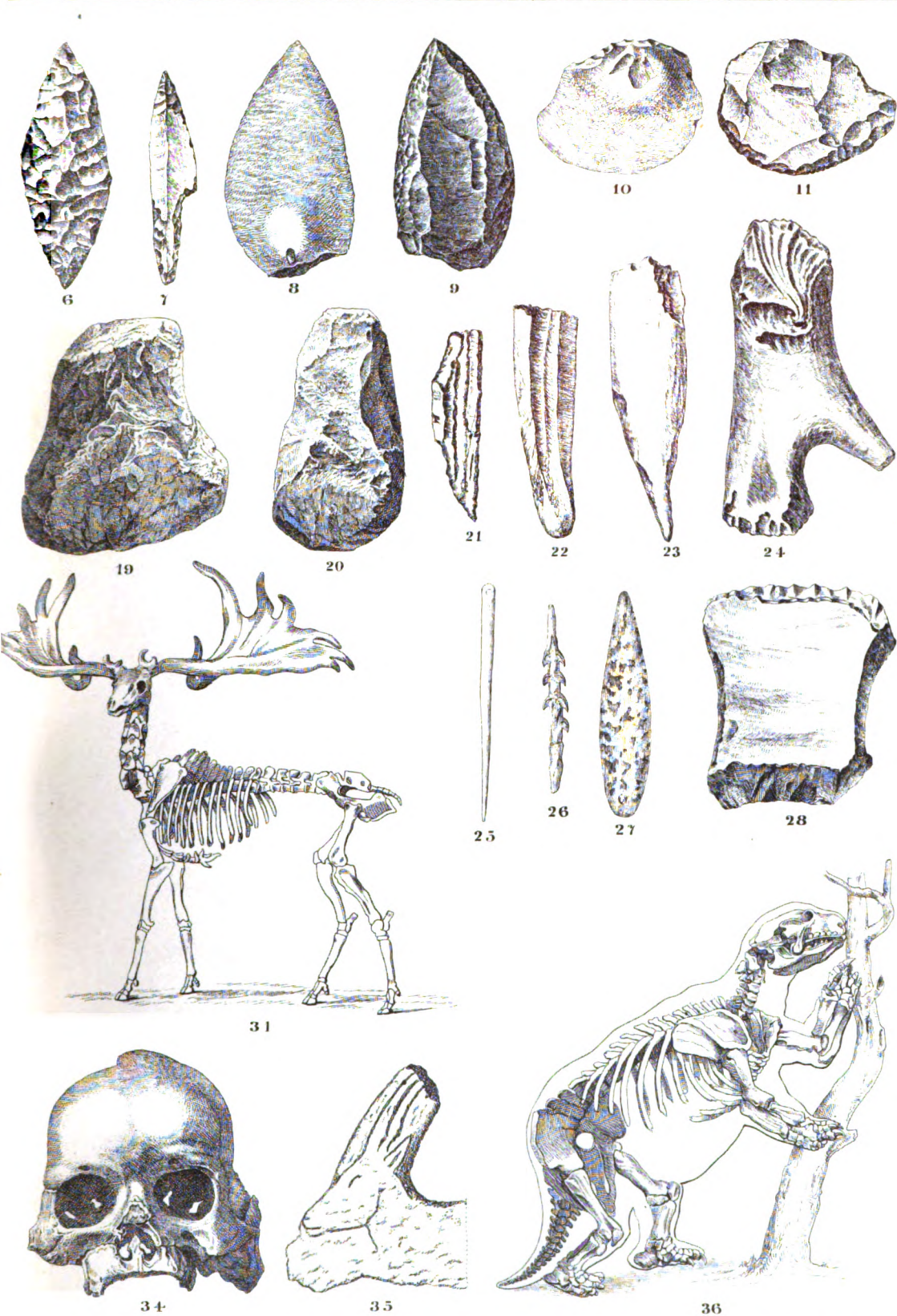


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PALÆOLITHIC PERIOD OF THE EASTERN AND WESTERN HEMISPHERES.—1, 2. Flints from Thenay (France). 3. Flint implements from Solutré (France). 8, 9. Point; 10, 11, Scraper (obverse and reverse) from Le Moustier (France). 12–14. Palæolithics from Japan. 21, 22. Chipped flints and bones; 23, 24, 28, Palæolithic implements from the Argentine Republic (South America). 29. Siberian elephant. 30. Mastodon. 31. Skeleton of the Irish elk. 32. Knife-handle: Solutré. 35. Engraving on a reindeer's horn, from La Madeleine. 36. Mylodon from the Argentine Republic.



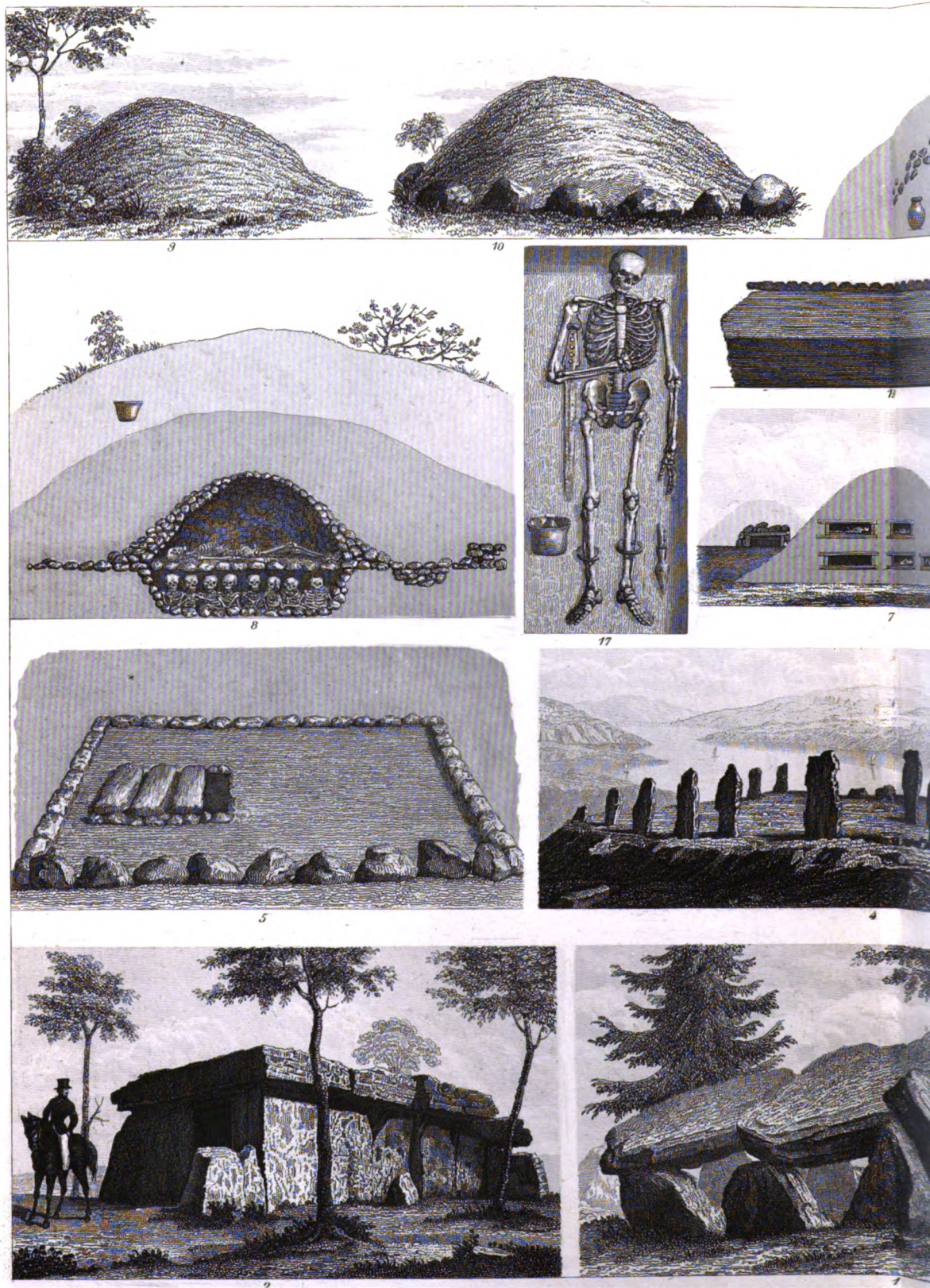
from near Lisbon (Portugal). 4, 5. Implements from St. Acheul (France). 6. Leaf-shaped point; 7, "Pointe à cran," imple-
lithic implements from Egypt. 15-18. Palæolithic implements from Trenton (New Jersey). 19, 20. Palæolithic implement
ca). 25. Bone needle; 26, Harpoon in deer horn, from the grotto of La Madeleine (France). 27. Plummet from the valley
culptured mammoth, from La Madeleine. 33. Glyptodon from the Argentine Republic. 34. "Calaveras skull" (California).



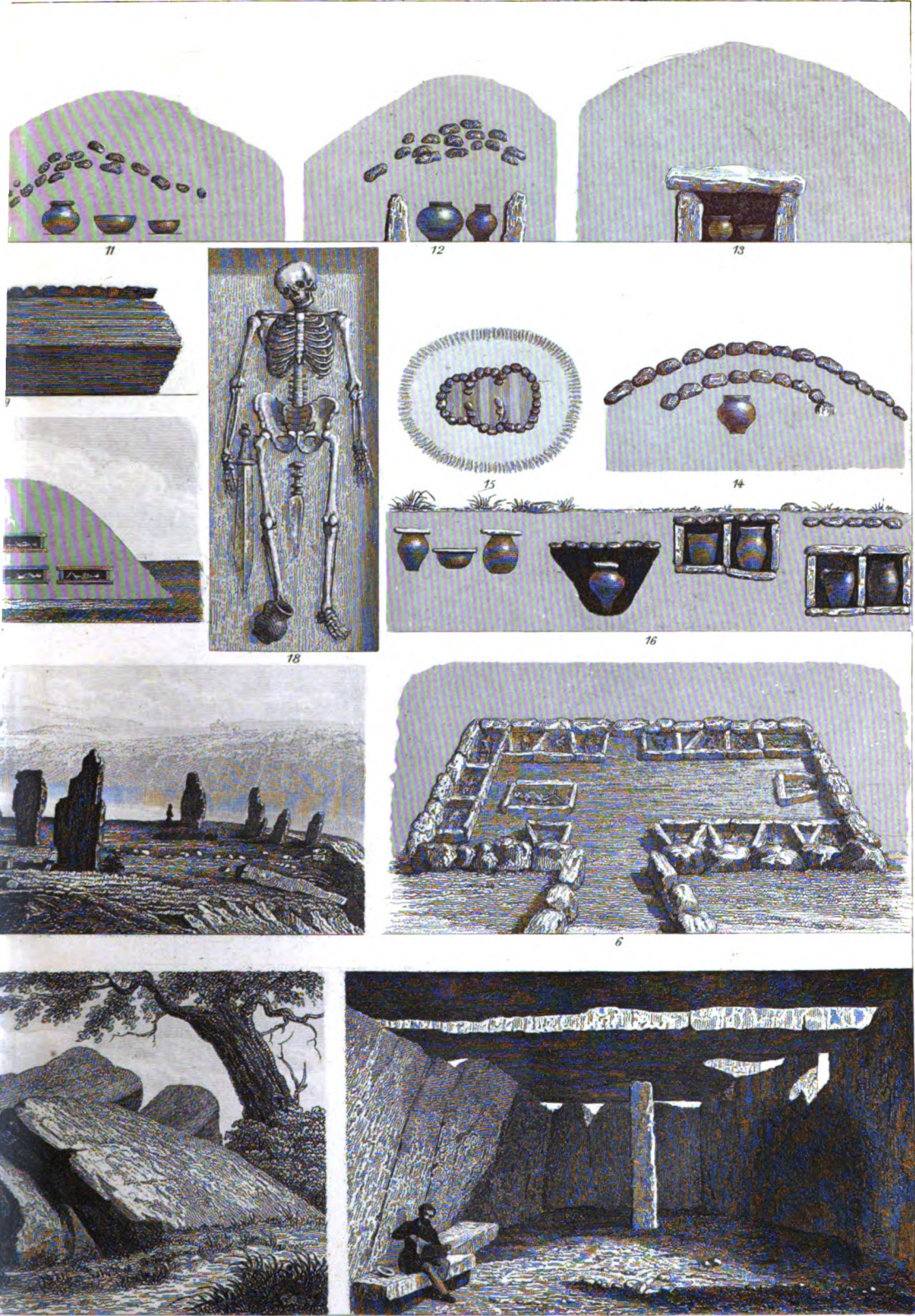
REMAINS OF THE GLACIAL AND STONE AGE.—1. Implement of a reindeer's horn. 2. Fish-hook of reindeer's horn with bone. 9. Bone implement. 11. Engraved bone of reindeer, found near Turzac (France). 12, 13. Stone implements. 14, 15. Stone hammers with drilled holes. 24. Stone hammer, grooved to fasten the handle. 25-27. Grooved stone chisels. 28. R. Drilled hammers and axes. 38. Whetstone. 39-46. Arrow- and spear-points. 47. Curved stone knife. 48. Ornamented deer 54. Ornamented cylinder of bone. 55, 56. Combs. 57. Whalebone axe. 58-67. Earthen vessels from Lake Neufchâtel (Switz. Necklace of teeth and a claw, from Hinkelstein. 72. Amber bead. 73. Throwing-stone. 74, 75. Types of prehistoric skulls, f



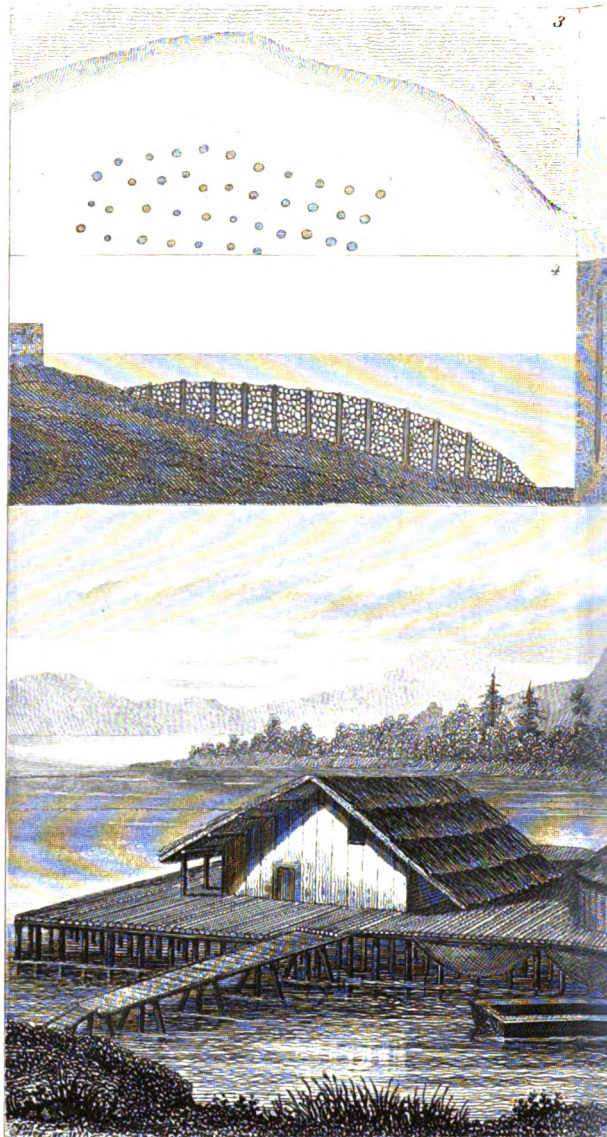
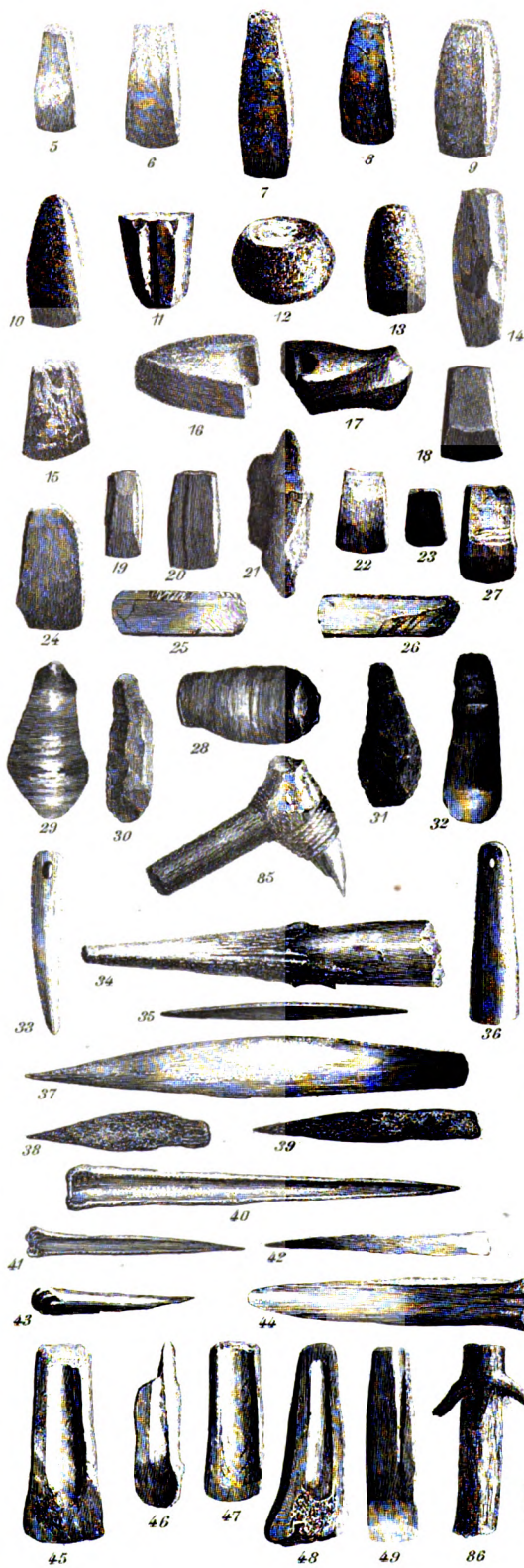
with back prong broken off. 3. Bone ladle. 4, 10. Antler prongs. 5. Bone needle. 6. Spear-head. 7, 8. Spear-points of
14, 15. Unworked splinters of flint. 16-18. Palaeolithic stone wedges, or chisels. 19-21. Neolithic stone wedges. 22, 23.
28. Knife-shaped double-edged flint. 29. Stone sickle. 30, 31. Stone scraping-knives. 32. Stone hammer, or axe. 33-37.
deer's horn. 49, 50. Bone implements. 51. Prong of deer's horn shaped into a hollow chisel. 52, 53. Bone arrow-points.
(Switzerland). 68, 69. Earthen vessels from Hinkelstein (Rhenish Hesse). 70. Piece of pottery with foliated ornament. 71.
ulls, from the grotto of Furfooz (Belgium). 76-78. Skulls from Switzerland.



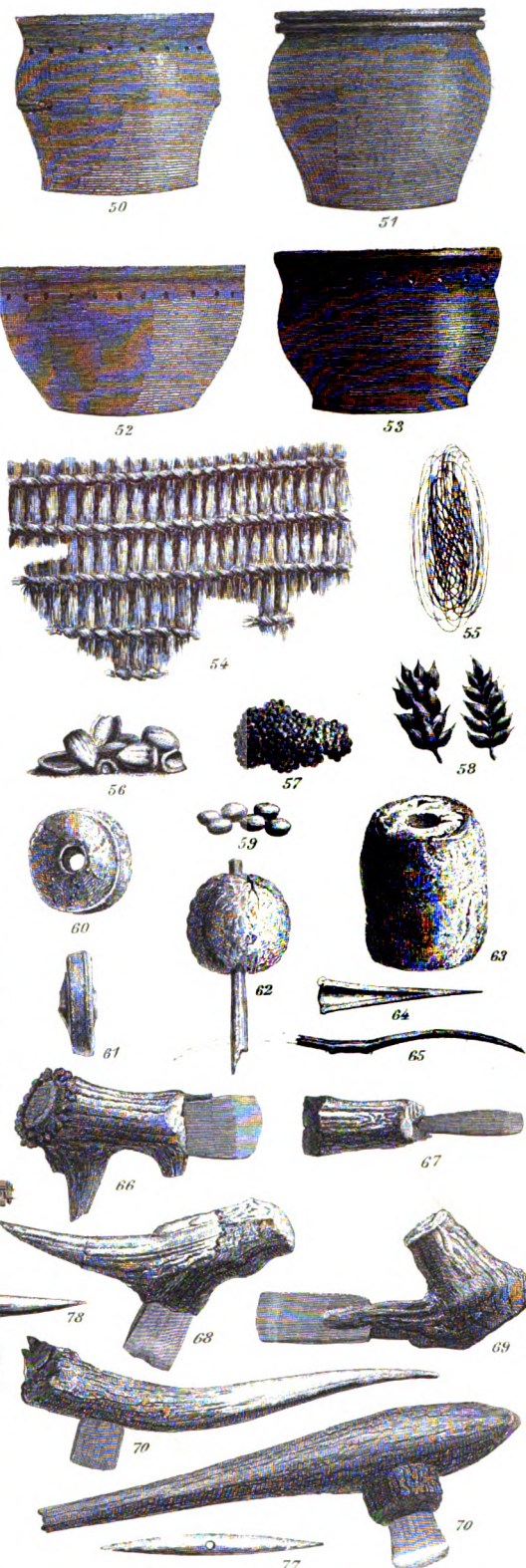
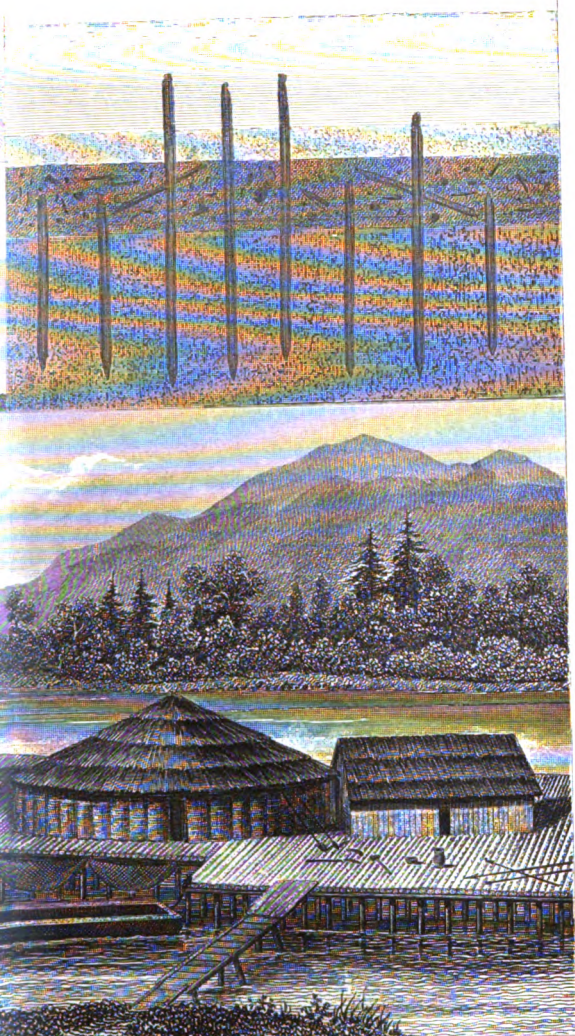
ANCIENT GRAVE-MOUNDS AND TOMBS.—1. Giant's tomb in Lower Saxony (Germany). 2, 3. Fairy Grotto at Saumur (France, island of the Baltic Sea). 7. Cross-section of grave-mound on the Orkney Islands. 8. Cross-section of tomb (Herrberg) of many cinerary urns. 15. Terraced mound near Uelzen (Prussia). 16. Cross-section showing subterranean interments in cinerary urns. "Dead," from an Alemannic graveyard near Oberflacht, in Suabia.



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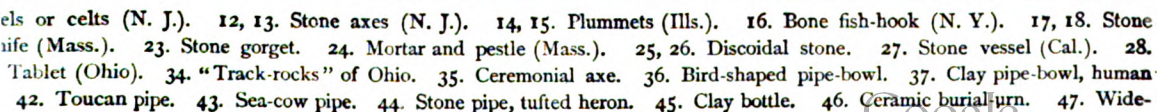
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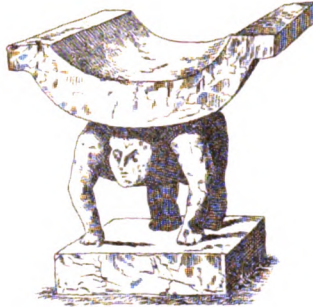
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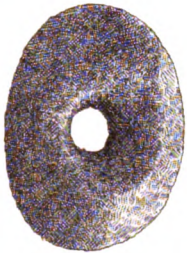
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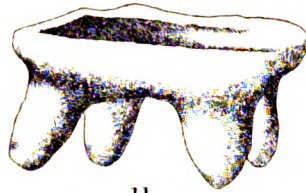
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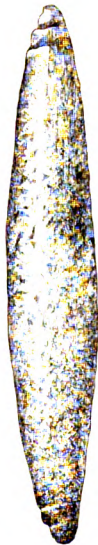
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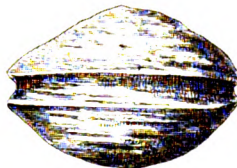
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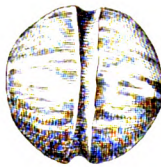
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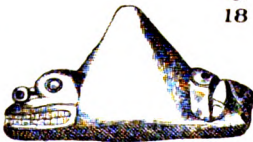
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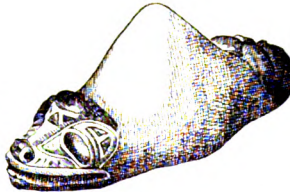
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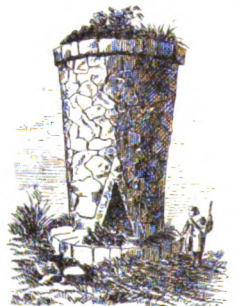
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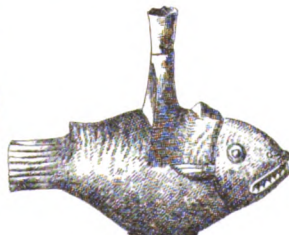
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PART II.

HISTORY OF CULTURE.

INTRODUCTORY.

IN its broadest sense Culture may be considered as identical with Civilization, and as thus embracing all the results of human effort to ameliorate the condition of the race. It is substantially in this sense that the word is used in the following "History," which, however, owing to the nature and arrangement of the work of which it forms a part, deals more with external features than with underlying principles or formative influences. Many of the topics that fall within its scope are treated at length in other volumes. What is here presented is a general sketch of the successive phases of social development in their historical sequence and connection.

The change from a migratory to a settled existence, from tribal aggregations to organized communities, was the first step in a course of progressive improvement. There were doubtless innumerable attempts in this direction which proved premature and abortive. Yet the earliest civilization known to us maintained itself without interruption through a long succession of ages, and is believed to have passed its culmination and begun to decay before its influence extended beyond the region in which it was so firmly established. This is accounted for by the nature of the country. The valley of the Nile was specially fitted to become the cradle of civilization in its helpless infancy. It presented a unique combination of all the conditions requisite for a secure and continuous development—a soil perennially renewed by the agencies of Nature and demanding only the lightest labor and simplest methods for its efficient cultivation; a climate exempt from violent disturbances and destructive changes, and from the extremes that overtask or enervate the energies; complete facilities for internal intercourse and absence of all physical impediments to national unity and organization; and finally, an all-but impenetrable girdle of natural boundaries, affording almost absolute security and isolation.

The civilization of Egypt, purely indigenous not only in its origin but in its whole development—cast, as it were, in a mould, and thus complete in itself and uniform in all its parts—impresses us rather as a product of unconscious instinct than of free intellectual activity. It presents the spectacle of a varied and well-ordered industry, a high degree of knowledge and skill in the mechanical arts, and a social life systematically

framed and regulated, all apparently preserved and controlled by conceptions derived from the processes of Nature in a land where these pursued an unchanging round in evident conformity to a fixed sway and prescribed limits. Hence it was self-contained and self-sufficing, with no need or capacity for absorption or expansion. It imported no elements from abroad, and it sought no dissemination by means of colonies or otherwise. Above all, it never gave birth to a literature—never, so to speak, became vocal. The monuments in which its conceptions were embodied excite curiosity and admiration; but, except in their occasional suggestions of a profound symbolism, they make no appeal to those feelings which seek in art the revelation of a common humanity.

In contrast with this secluded, homogeneous, and in a certain sense complete historical development, Western Asia exhibits a diversity and confusion of types, caused by incessant floods of migration and conquest, a continual shifting of the centres and bases of civilization, and an endless struggle against the irruptions of nomadism. Here the three great races which for so many ages competed for supremacy were in perpetual contact and collision. The superiority of the Semitic race seemed for a long time to be assured by its preponderance in numbers and the varied qualities and resources of the nations composing it—the Babylonians and Assyrians, the Lydians, the Phœnicians, the Hebrews, the Arabians, and others. But the successive attempts to bring these different branches under a single dominion that might have established the supremacy of the race and enabled it to defy the encroachments and assaults of its rivals had only a temporary success; and the kindred states and nationalities that had played the most conspicuous part in the development and extension of civilization were overwhelmed by repeated tides of invasion, until nothing remained but stranded wrecks and scattered waifs. After many centuries a fresh and unparalleled burst of energy and power in a Semitic people sent forth a stream of conquest that swept over the shores of the Mediterranean to the Atlantic Ocean on the west and to the plains of India on the east. But again the race which had thus asserted its traditional claim to universal mastery was compelled to succumb. Henceforth its condition was to be that of servitude, its place in history a blank. Yet all its failures are balanced by the singular ascendancy of its ardent and fruitful spirit, the impulse which it gave to the nascent civilization of the Hellenic people, and the widespread and permanent rule of the religious conceptions and doctrines proclaimed by its prophets and teachers.

Intellectual culture in the sense in which the term is commonly understood had its origin and home in Greece. Here the characteristic features of the European continent—its chain of peninsulas, forming a deeply-indented coast-line, its broken surface and diversified scenery, all the physical incentives to a free and active existence—are reproduced in miniature, in close proximity to the only part of Asia possessing similar advantages. The people that occupied the shores and islands of the Ægean Sea may well have been guided thither by some subtle instinct in

its search for the surroundings best suited to its inborn capacities. Its intellect was at once the most receptive and the most original that any race has ever possessed. Whatever in the way of material, of suggestion, of rudimentary knowledge, the Greeks may have derived from others, they alone were the creators who gave life, beauty, and artistic form to all that they produced. Greek culture was the outgrowth of a conscious intellectual activity rejecting the rule of prescription and convention and embracing the service of absolute truth and ideal perfection.

The Roman nature was the opposite of the Greek, lacking all that the latter possessed and possessing all that it lacked. Not beauty, but utility, was its aim; not theory or speculation, but authority, its guide; not freedom, but law, its animating principle. The sense of duty, of obligation, of an inflexible justice as the ruling power of the universe; submission to established order and devotion to the state; laboriousness, tenacity, fortitude, implying both courage and strength, the strength that comes from courage and the courage that comes from strength,—these were pre-eminently Roman qualities, and in their assemblage they constituted a moral superiority not less marked and not less fruitful than the intellectual superiority of Greece. The world-empire reared on these foundations was no mere creation of aggrandizement and conquest: it was as much in the order of nature as any tribal, civic, or national organization.

Ancient civilization was throughout its whole development exposed to two dangers—the tendency to retrogression and decay inherent in every system, and only to be counteracted by the influx of fresh energies and resources, and the constant pressure of an outside world of barbarism. The zone of that civilization was a narrow belt comprising the most fertile and attractive portions of the known world; and beyond it were vast regions occupied by migratory races, ever increasing in numbers and dashing at the barriers by which it was sought to repel them. With the overthrow of the bulwarks erected by Rome and the irruptions that followed, a new cycle of history begins. Goths and Huns, Vandals and Franks, sweep over the lands where the treasures of art and industry lie stored, their first impulse only to ravage and destroy. Hellenic culture—like so many of the rivers of the country in which it rose—sinks into subterranean channels, and will not re-emerge until its existence has been almost forgotten. The Roman polity, though it still awes and restrains, loses its integrity and compelling force. The old order, fallen into decay, collapses wherever it is assailed, and chaos seems about to supervene.

It was not by the spent forces of antiquity, or through the mere mingling of diverse elements, old and new, that society was to be slowly renovated and a wider and more stable civilization gradually evolved. It needed a purer light than that of Greece, a higher law than that of Rome, a fuller conception of humanity than any that could have arisen from the confluence and fusion of barbarous with effete nations, to penetrate, subdue, and harmonize the discordant powers and impulses that had been thrown into confusion and conflict. The glory of Athenian culture in its full

bloom, the majestic repose that had once enfolded the nations under the sway of Rome, hid and fostered the germs of a rapid and irresistible decay. In the tumults and torpors of mediæval society the vivifying and purifying influences of Christianity, feeble and overmatched as they might seem, held the promise of a sure and lasting progress. The recognition of the human family as children of a common Father and subjects of a divine rule modified by degrees inherited tendencies and traditional customs, tempering the dominion of the strong over the weak; mitigating the ferocity of war, the cruelty of codes, and the foul excesses of licentiousness; elevating the position of woman; limiting slavery and preparing the way for its extinction; introducing standards and instilling sentiments to which the most refined nations of antiquity had been strangers. It was natural, and even necessary, that in the struggles of such a period society should lie under the control of an ecclesiastical organization, even though its functions were thus impeded and its intellect kept dormant. The awakening was long deferred, but it was all the more complete.

The close of the fifteenth century saw the European system of nations framed and in process of consolidation; the shackles by which reason and conscience had been cramped while Christendom was attaining to unity thrown off; the era of great inventions opened by that of printing, which gave wings to all the rest; literature and art scaling heights from which the whole field of life was to be surveyed and delineated; and the world itself enlarged by the discovery of an unknown hemisphere. Thus equipped and directed, modern society started on its career, in which new vistas were continually opening, new problems pressing for solution, and new ideals rising into view. Impulses from every quarter spread and kept alive a ceaseless activity. The lamps of ancient learning were relighted; the motions and relations of the heavenly bodies were revealed; migration took swifter and bolder flights than ever before, carrying with it, not barbarism, but civilization; commerce, stimulating countless industries and calling to its aid undreamed-of appliances, threw a net over the globe; old ideas and habits were discarded, old institutions abolished; science, so long a purblind, stumbling guide, restricted and contemned, pushed forward as a conqueror claiming a boundless domain. During the last three centuries the world has seemed to be in process of remaking.

But human nature has not been transformed, nor has the course of human destiny been made smooth. In proportion as the load of evil under which society has always labored is lightened, the burden of its responsibilities is increased. In the light of a fuller consciousness it recognizes the momentous nature of the tasks imposed upon it, the obstacles and dangers that confront it, the conflicting tendencies by which it is swayed, the egotisms and illusions that distract it, and the loss of that trustful sense of dependence which was the compensation for its early weakness and lack of freedom. In the endless round of change no poise is attained, no point from which the present may be complacently regarded and the future faced without apprehension.—EDITOR.





THE NATIONS OF ANTIQUITY.

I. THE EGYPTIANS.

THE ancient Egyptians considered themselves the original inhabitants of their country. This, however, is simply a proof that when they began to speculate concerning their origin they had no recollection of having migrated from an earlier home. Modern ethnologists are nearly unanimous in the belief that the Egyptians came from Asia, for, while there is no such evidence in this case as in that of the European nations, it is certain that they resembled the indigenous African races neither in form, in features, nor in language. Their ideas of a prehistoric age were very unlike those of most other ancient civilized peoples, and their traditions were exceedingly obscure.

Classes.—That they were not the original inhabitants is shown by their separation into classes—a fact that can be explained only by the relation of conquerors to the conquered. This separation was distinctly marked, though the classes were not castes in the strict sense of the word. The number of classes is differently stated by ancient authors. Herodotus makes them seven, Plato six, and Diodorus five, as follows:

Classes of Herodotus.

1. Priests;
2. Soldiers;
3. Cowherds;
4. Swineherds;
5. Traders;
6. Boatmen;
7. Interpreters.

Classes of Plato.

1. Priests;
2. Soldiers;
3. Herdsmen;
4. Husbandmen;
5. Artificers;
6. Hunters.

Classes of Diodorus.

1. Priests;
2. Soldiers;
3. Herdsmen;
4. Husbandmen;
5. Artificers.

The paintings in their tombs, which accurately represent their entire life, show that several races differing in physiognomy and in color lived together and intermingled to some extent in the valley of the Nile.¹

¹ There are no sufficient reasons for believing that the Egyptians were a mixed people, or that their institutions were based upon conquest and the consequent distinctions between a dominant and a subjugated race. The different classes or castes were not separated by rigid, impassable lines, as in India, nor was any portion of the population regarded as an alien and naturally inferior people, like the Sudras. Intermarriage and adoption were not forbidden, and social inequalities, though no doubt strongly marked, were such as naturally arose from differences of rank, wealth, and occupation, and do not seem to have inflicted any stigma or mark of degradation on those who stood lowest in the scale. In the mural paintings the Egyptians of all classes are distinguished in features and color from other races, such as Libyans, Syrians, and Negroes. It has, however, been asserted that cranial differences may be detected between the Egyptians of the earlier and those of the later empire. This is highly improbable in itself, and the evidence, as in most such cases, is dubious and deficient. An absolutely pure race has yet to be discovered, but there is no people whose homogeneous character is so well attested by its long isolation, the regularity of its history, and the uniformity of its life and customs as is that of the Egyptians.—ED.

History.—Egyptian history is considered as beginning with the foundation of the monarchy in Lower Egypt, of which the capital was Memphis. But authorities differ greatly in regard to the date of this event, which is calculated from a comparison of the list of kings given by Manetho, an Egyptian priest who lived in the third century B. C., with the hieroglyphic records on the monuments. Both these sources of information are defective, and in some cases it is difficult to reconcile them. The reign of Mena, or Menes, the first king, is thus variously dated by distinguished Egyptologists: 5702 B. C., Boeckh; 5004 B. C., Mariette; 4455 B. C., Burali; 3892 B. C., Lepsius; 3623 B. C., Bunsen. After the union of Upper and Lower Egypt (about 2400 B. C., according to Lepsius) the seat of government was established at Thebes.

Under many successive dynasties the nation enjoyed a long continuance of order and peace; and civilization, on the firm basis of agriculture, and to a less extent on that of commerce and manufactures, was slowly but steadily developed. But the long isolation secured by the natural boundaries of the country led apparently to a neglect of other precautions for defence, and about 2100 B. C. Egypt was overrun by a swarm of nomads from the desert, whose chiefs established a dynasty known as that of the Hyksos, or "Shepherd-kings." Several centuries later these were expelled, and Egypt, under the kings of the eighteenth dynasty and its successors (1591–940 B. C.), entered on a course of foreign wars and expeditions, followed by the growth of luxury, the spread of corruption, and other symptoms of internal decay, with the ultimate effect of diminishing the resources and enfeebling the spirit of the nation and making it the easy prey of stronger and more warlike empires. In 672 B. C. Egypt was conquered by the Assyrians, and, though it subsequently recovered its independence, this was finally lost in 525 B. C., when the country became a province of the Persian empire. After the fall of that empire and its division among the successors of Alexander the Great (323 B. C.), Egypt was governed by the Ptolemies, and shared to some extent in the benefits of Hellenic culture, the new capital, Alexandria, being for a time the chief centre of Greek learning and philosophy. Absorbed by the Roman empire (30 B. C.), Egypt enjoyed a long period of comparative prosperity, but its ancient civilization was not replaced by one of a higher order, and it received no return for that instruction in the arts and sciences which it had been the first to impart to the world. Its subsequent history resembles that of the other Eastern countries that have fallen under the sway of Mohammedan conquerors and rulers. Owing, however, to the nature of the soil, which is kept perpetually fresh by the inundations of the Nile, and to the character of the people—docile, industrious, and not deficient in intelligence—it has suffered less than most other parts of the Turkish dominions, and is more capable of being raised to a higher condition under a just and energetic administration.

Character.—The character of the Egyptians was moulded and developed chiefly by the peculiar conditions of the Nile Valley, on both sides

of which bleak rocky walls and extensive deserts shut out the rest of the world, while in the midst flowed a magnificent stream whose annual inundation gave fertility to the land and sustenance to the inhabitants. They honored the first teacher of agriculture, whom they identified with their chief god, and their absolute dependence on natural phenomena led them to recognize as divinities the forces of nature. The worship of these forces became more firmly established as they were more closely observed. The regularity of nature was transferred to human life, and strict order became the characteristic trait of the Egyptians in all their affairs. Out of this grew that excess of self-consciousness, that pride, which down to the latest period caused them to look down upon foreigners—a trait which, after the conquest of the Promised Land, became an equally indelible characteristic of the Israelites, a people nearly related to the Egyptians.¹

But the fundamental trait in their character was a gloomy resignation, incompatible with any hearty enjoyment of life. They esteemed their houses, which were merely “places of sojourn,” far less than their tombs, which were to be their “eternal abodes.” To these only the “dwellings of the gods” could be compared. It is especially from the tombs, and next to these from their temples, that our knowledge of their material and spiritual condition is derived. But we learn less from the objects deposited in the tombs than from the paintings on their walls, depicting in animated colors scenes from the life of the deceased as a means of affording him satisfaction in the realm of death.

Form.—Plate 10 represents the exterior appearance of the people. The paintings, in which they have portrayed themselves with the greatest exactness, show that they were tall, slender, and of pronounced Semitic physiognomy.² The men were of reddish-brown color, the women somewhat lighter, and both sexes had black curly hair. (See Vol. I. p. 354.)

Costume.—On account of the heat of the climate their dress was exceedingly scant until the growth of luxury increased and regulated it in accordance with the different grades of society. They used cotton and flaxen materials, which by careful treatment were rendered almost transparent (*figs.* 1–3). These materials were of various colors, and were richly decorated with peculiar designs, and even with metallic embroideries; but pure white prevailed.

The common people wore merely a cloth about the loins (*fig.* 12); the higher classes wore it also, but wider and more elaborate (*fig.* 10). The former wore on the head a plain skull-cap to guard against the piercing rays of the sun. Sandals of leather or bast were a distinction of the

¹ The relationship of the Israelites to the Egyptians is extremely doubtful, and cannot in any case have been a close one. The feeling which led the Egyptians to avoid social intercourse with foreigners was a natural result of their long isolation and the jealousy engendered by it. With the Israelites the predominating sentiment was a regard for the purity of their creed and of their race as the “chosen people” of Jehovah—a sentiment that was not always strong enough to resist the influence of the freer manners and more sensual religions of neighboring nations.—ED.

² This is much too strongly stated: the features of the Egyptians, like their language, show at the most only a slight resemblance to the Semitic type.—ED.

upper ranks. The women lengthened the loin-scarf into a skirt-like garment (*pl.* 10, *fig.* 11). The loin-cloth continued to be the peculiar national garment even during the most flourishing period of the kingdom, but skill was acquired in draping it artistically, and there was added to it a decorated girdle whose ends hung down in front (*fig.* 6). Sometimes a more costly material was worn over it, but this was the privilege of the higher classes, and they alone were allowed to wear upper garments—a thin over-dress (*fig.* 5) or a tanned panther skin, which latter was the distinguishing costume of the priestly class (*fig.* 4).

The lengthening of the cloth into skirts (*fig.* 7), which even the men adopted, was another form of luxury, but it was always subject to class etiquette as developed during the most flourishing period of the monarchy. The king, and naturally also the queen, enjoyed the most extensive privileges in the matter of dress (*figs.* 1, 2): they used the finest and most attenuated materials, and were thus enabled to appear in pompous array without being oppressed by the weight or closeness of their garments.

The head-dress, more than any other part of the costume, formed the distinctive apparel of the higher classes. Though it may be traced in every case to its simple original form, it exhibited a remarkable variety of decoration, especially in its ceremonial arrangements. The simple skull-cap of the common people, sometimes merely woven of rushes, was, when worn by the upper classes, decorated with bright colors. The highest dignitaries wore a hood (*fig.* 6), which was formed of a cloth laid on the head and held in place by a hoop, and, hanging in folds on either side, was twisted into a braid at the back.

Hair-dressing.—In the earliest times the Egyptians wore their hair in its natural state; and we find in the oldest delineations those ringlets which to this day distinguish the Numidians (*figs.* 13, 14), the purest representatives of the primitive race of the Nile Valley. Later, both men and women shaved the entire scalp and wore wigs instead of their natural hair. The lower classes, however, were only permitted to shave the head—a privilege of which the women appear not to have availed themselves (*figs.* 11, 12). People of rank found a means of distinguishing their respective grades by the more or less elaborate coiffure. Figures 2-5, 7, and 10 (*pl.* 10), and Figures 1 and 3 (*pl.* 11), all have false hair. Some of these wigs which have been preserved are hardly inferior to those of the seventeenth and eighteenth centuries. Even the beard was shaved and replaced by a false one (*pl.* 10, *figs.* 4, 10), represented by the cube-shaped attachments frequently found under the chin of the Egyptian statues. Kings generally wore a braid curved toward the front and fastened beneath the cheeks (*pl.* 10, *fig.* 1; *pl.* 11, *figs.* 1, 2). Children of the royal house wore the so-called "prince's curl" of natural hair (*pl.* 11, *fig.* 4).

Ornaments.—Like all peoples whose taste for ornament is that of nature rather than of cultivation, the Egyptians were excessively fond of finery. They used rouge, pomades, and perfumery, as well as jewelry of gold, precious stones, and colored glass, and they wore rings in the ear,

on the finger, arm, and ankle, and bands about the neck and forehead (*pl.* 11, *figs.* 31-39). Mummies have been found with the hands loaded with rings. Even a sort of seal-ring was worn by the men. Many articles of jewelry, in the form of the snake, the eye, etc., had a symbolical significance, and were often worn as amulets (*figs.* 39-41). The *scarabæus*, or sacred beetle (*fig.* 44), was the most important of these.

Insignia.—But more important than its ornaments were those parts of the dress which served as indications of office and rank. The Egyptians were to a certain extent the inventors of the uniform, which was with them a highly-developed adjunct of social culture, while its modern use is but a faint reflection of earlier displays.

Naturally, the Pharaohs and their wives ranked first in the use of distinctive apparel. As they were the representatives of the highest divinities, their dress combined the distinguishing costumes of royalty and the priesthood. The royal apparel, which was remarkable for splendor and ornament, and particularly the head-dress, were enriched with special emblems which distinguished the sovereign in every official act. As master over life and death the king always bore the *uræus* or asp on his forehead (*figs.* 1, 2), and sometimes also on his garments or even on his beard. His simplest head-dress was a diadem (*fig.* 6), which was also adorned with the *uræus* and had ribbons hanging from the back. A more frequent form was a high cap in two styles—red for Lower Egypt (*fig.* 5), white for the upper kingdom—and shaped like that on the royal head on the harp in Figure 24. After the union of the two kingdoms these crowns were combined into the so-called *pshent* (*fig.* 2).

Various symbolic insignia were added to this head-dress, or even substituted for it, according to the royal or sacerdotal functions in connection with which it was used (*fig.* 11). The whip and shepherd's crook (*figs.* 7, 8) served as sceptres, and recalled the early practice of agriculture and cattle-raising by the Egyptians. All the members of the royal family wore the *uræus* on special occasions (*figs.* 3, 4). A mallet-shaped sceptre, called *pat*, designated the male relatives of the king and the chief court officials. The queen was distinguished by a golden head-ornament in the shape of a vulture (*fig.* 3) and by a sceptre with a curved and lily-shaped end (*fig.* 9; *pl.* 10, *fig.* 2).

The royal servants—prominent among whom were the fan-bearers (*pl.* 10, *fig.* 6)—wore costumes of various kinds, but we can no longer determine precisely the grades of those officials who immediately surrounded the Pharaohs. Rich head-bands (*pl.* 11, *fig.* 11) and long staves with a hook below the point are frequently seen. The judges, who belonged to the priestly class, wore a feather on the head (*pl.* 10, *fig.* 7), symbolizing justice; the chief judge bore on his breast a plate inscribed with hieroglyphics having a similar signification.

The vestments of the priests—and in a less degree those of the priestesses—were still more varied and more strictly regulated according to place, rank, and ceremony. As the Egyptian political system was partly

hieratic and partly monarchical, a considerable but indefinite power was lodged in the hands of the priests, who constituted the learned class. In a contrasted rather than inferior position stood the warrior class, who doubtless owed their origin to the forcible conquest of the country, and their importance to the necessity of defending it against foreign and domestic foes.¹ The king united the power of both classes in his person, and thus mediated between them, though his influence, apart from that which he derived from his royal attributes, varied with his personal qualities. The soldiers wore as their class-mark a ring ornamented with the scarabæus (*pl. 11, fig. 39*). The body-guard of the king (*pl. 10, fig. 8*) was distinct from the warrior caste, and seems to have been composed of foreigners.

Dwellings.—In his hot and dry climate the Egyptian considered his house merely as a place for storing his property and for shelter at night. During the hot day he preferred the shady trees of his carefully cultivated gardens. As a consequence, private houses, quite unlike the temples and tombs, were very light and simple in construction, consisting merely of lattice-work and tiles made from the clay deposits of the Nile. A walled enclosure marked the separate property of the individual householder; the larger portion of it was occupied by an open court, which served for purposes of business and for family intercourse; in the rear a few rooms were constructed, the lower ones probably being bed-rooms and store-rooms, and the upper ones dwelling-rooms (*pl. 11, fig. 107*); a roof not being necessary, these latter took the shape of an open gallery, where in the cool of the evening the family assembled. (See *Frontispiece, figs. 1, 5*.)

While it is true that none of the private dwellings of the Egyptians have been preserved, a wooden model (*pl. 12, fig. 3*), found in a tomb at Thebes, gives a fair idea of their primitive arrangement. A low door, elevated a little above the ground, perhaps on account of the Nile overflow, leads to the inner yard, whence stairs ascend to the gallery, one end of which is closed on the sides and roofed. Oblong openings in the front wall, which no doubt could be closed, took the place of windows. Diodorus speaks of four- and five-storied houses. Naturally, the size and style depended on the means of the owner. Pictures of later structures (*fig. 4*) show dwellings built of more durable materials, with handsomely furnished apartments and vestibules (*fig. 5*) with architectural ornaments. Statues of the gods or of the kings were erected in the vestibules, but the character of the people and of the epoch leads to the conclusion that these had a religious rather than an æsthetical purpose.

The Household Articles, originally very simple, became more numerous and luxurious after Egypt by its successful wars had acquired rich booty and made foreign nations tributary. The furniture of the various rooms was costly and magnificent. Precious metals and the choicest woods from

¹ The prestige of the warrior class dates from the period of foreign expeditions. The early pre-eminence of the priestly class is an integral element in the peculiar form and development of Egyptian civilization.—ED.

foreign countries were wrought into articles exhibiting much taste. These, together with silks and cloths of Oriental texture, increased the comfort and charm of the dwellings. The beds, richly hung with tapestry, were in the form of lions, jackals, bulls, and sphinxes; and the tables (*pl.* 11, *fig.* 99), chairs (*figs.* 101, 106), ottomans (*fig.* 102), divans, couches (*fig.* 98), chests, coffer (*fig.* 92), drinking-vessels, etc., were of the most finished workmanship. The folding chairs had commonly feet representing necks of swans, the heads downward; candelabra and lamps (*fig.* 91), vessels of every size (*figs.* 71–81, 83), vases of gold (*fig.* 82), gilded metal, silver, and other expensive materials, in luxuriant abundance, of costly form, and studded with enamel and precious stones, were the usual appendages. The large vase (*fig.* 82) and the ornamented chair (*fig.* 101) may be considered as articles of tribute, the fettered bearers representing the givers. Wealth appears, nevertheless, to have been confined to the nobility, as the mass of the people always remained in a state of needy dependence.

Palaces.—Whatever pertained to the dwellings of the rich pertained in the highest degree to the palaces of the kings. But we here meet with a peculiar feature. As the sovereign enjoyed divine honors, his dwelling assumed in many ways the character of a temple. Consequently, we cannot always decide whether extant ruins were once the temple of a god or the palace of a Pharaoh. However, regarding the ruins of the palace of Rameses III. at Medinet-Abou there appears to be no doubt as to its original purpose. On the outer wall the king is represented in a huge figure armed with bow and arrow and taking part from the shore in some sea or river battle. The inside walls contain scenes from private life—the king fondling his daughters, playing draughts, hunting lions, etc. The portico, which in the temples is open, is here pierced with windows, and balconies project from the rooms into the courtyard. The ruins otherwise exhibit only architectural peculiarities.

Social Life seems to have been little developed, but what was lacking in variety was supplied by the more fervent nature of the southern character. Although deeply penetrated by morality, and though their whole life was a preparation for death, the Egyptians manifested profound grief at the death of any one dear to them, and gave themselves up to its unrestrained utterance. They strewed dust on their heads, beat their faces, and ran about the streets clad in mourning and uttering loud lamentations—practices which still prevail in the East.

When the Egyptians became prosperous the seriousness which had characterized them in the early periods of their history was modified by the natural tendency to the enjoyments of life, and we find various forms of amusement, public and private, depicted in the sepulchral grottos of Beni-Hassan. Musicians, dancers, all sorts of merry-makers, and even a dwarf, appear where in earlier representations only serious occupations are portrayed. A papyrus roll preserved in the museum of Turin represents in an extremely comic manner human life in the guise of animals, and

reminds us of the fables of Æsop and the story of "The Topsy-turvy World;" it indicates that the sense of humor had already reached its due development in the times of the Pharaohs.

It is, however, probable that only the common people gave themselves up to unrestrained indulgence, the upper classes of society remaining more or less reserved; and also that in the course of centuries special times were set apart for pious practices and for merry-making—an arrangement adopted by Europe, and perhaps directly borrowed from Egypt, in the Middle Ages. The dancers and actors in the tomb-paintings are apparently foreigners. Many examples occur in history where subjugated peoples have regained by such arts a part of what they had lost, and diminished the superiority of their conquerors.

The high development of rural life promoted social intercourse among the people, and in the old tomb-paintings we see families interchanging friendly visits. Figure 3 (*pl.* 13) gives a fragment of such a picture, in which is portrayed a lute-player and also a female flute-player. It further shows a peculiar mode of travelling (*fig.* 3), the master accompanied by footmen and riding in a sedan chair borne by two asses.

Rural Life, of which the tomb-paintings give attractive representations, was highly developed. In these pictures we see the villa comfortably reposing amid tilled fields and carefully-kept gardens and surrounded by shaded walks and galleries. Subterranean rooms afforded shelter from the heat, and numerous fountains in the gardens moistened and cooled the air. Easily distinguished are the ornamental and useful plants growing in beds, and the Egyptian water-lily (*Nymphaea Lotus*), with its broad leaves and beautiful flowers, is seen resting on the bosom of the artificial lakes. Especial care was taken to connect each property with the system of canals which, for purposes of irrigation, stretched over the entire valley of the Nile. (See *Frontispiece*, *fig.* 5.)

Business Life.—It is entirely beyond the scope of this synopsis to particularize the details which have come down to us splendidly illustrated in the innumerable Egyptian paintings and sculptures. Nevertheless, in order to comprehend this ancient civilization, the subsequent influence of which is even yet not fully appreciated, we must picture to ourselves the rich and brilliant life which unfolded itself in the narrow valley of the Nile, with its innumerable villas, its many populous cities, and its yet more populous burial-places, and which, surviving the most violent political convulsions, lasted through a period of thousands of years.

We find the soil, as has been mentioned, most carefully cultivated, arts and industries zealously pursued, and intercommunication actively maintained. The river was alive with vessels (*pl.* 12, *fig.* 6, Nile barge); ports and cities were crowded with foreign visitors; embassies from distant peoples did homage to the king or brought him tribute; enemies were led before him as prisoners or as conquerors swept over the country like an inundation; great festivals brought together the populations of the most remote regions; and the sole will of the sovereign held

for decades thousands of men to a single task. In the midst of all this apparent variety there existed an essential uniformity, while at the same time a decided effort was incessantly made by each individual to withstand the absorbing influences surrounding him and to save his individuality from being merged in the common mass.

Agriculture and Stock-raising had reached a fair degree of development, limited as were in those days the range of special knowledge and the means of applying it. Farm-buildings, store-houses, and stables are also pictured. The ever-cloudless sky permitted the buildings to remain roofless. The stores of grain were piled in walled enclosures. The stables, in which the greatest neatness prevailed, were provided with raised floors, and the cattle were ranged in extended rows. Goats and swine were numerous, though the upper class despised the latter as unclean. The Egyptians in those early days understood the hatching of eggs by artificial means.

Plate 13, drawn from the tomb-paintings, gives details of Egyptian agriculture (*fig. 1*). We notice the simple form of the plough, the method of yoking oxen, the manner of sowing grain, and the reaper cutting the ear from the stalk with a peculiarly shaped sickle. In the background the oxen tread out the grain, and in front it is being loaded on an ass. In the distance is a granary with grated air-holes. Laborers ascend the steps and pour the grain in from above, while a scribe keeps account of the number of measures. On the right is a man tilling the earth, and two are engaged in pressing wine.

Industries.—In variety of achievements industry had attained no insignificant degree of perfection, but technical skill was only in its infancy. We find on the more ancient monuments representations of potters, weavers, fullers, ropemakers, leather-workers, and glass-blowers; and on later ones appear carpenters, wheelwrights, stone-cutters, house-painters, and other artisans. They are invariably, though not always distinctly, represented in the exercise of their trades. The utensils and tools on Plate 11 (*figs. 51–66*) recall in part the prehistoric period, as, in fact, the earlier periods of Egyptian history are included in the Bronze Age. (See *Frontispiece, figs. 8–15*, and pp. 47, 52.)

On Plate 13 (*fig. 2*) are represented mechanics whose labors may serve as a specimen of all the others. On the left is a smithy, which must not be understood as one requiring the use of iron: for bellows two laborers alternately tread down and draw up leather bags fitted with pipes, while a third man is busy at the furnace. Next is a pottery: on one side two helpers knead the clay with their feet; the vessels are turned on wheels, painted, placed in the furnace, and burned. At the right stone-cutters are dressing a monolith destined to serve as a pillar for a portico or a hall. In the distance men are hauling on a sledge a completed colossal figure; the leader, standing on the knees of the figure, gives the command for steady pulling, and another man at its feet pours water on the wood to diminish the heat caused by friction. Many articles whose manufac-

ture is now assigned to special mechanics were in those days exclusively home-made.

Hunting and Fishing were favorite pursuits, as appears from the tomb-pictures, which also show the manner in which they were carried on. Among the animals of the chase we especially find the gazelle and the hare. Ostriches were hunted with dogs, and hippopotami were slain with the harpoon. In other cases bows and arrows were the weapons of the chase. Birds were caught with a net, or by means of a curved stick which was cast among the flock in the papyrus-thickets, and which, whirling about in its descent, effected great slaughter. Fish were caught with hooks or with two-pronged harpoons. (See *Frontispiece*, *figs.* 18, 19.)

Musical Instruments.—The assertion of Diodorus that the Egyptians were not fond of music undoubtedly refers to secular music: it was universally used in their worship, and we thus understand why numerous and divers kinds of instruments were found among them. The so-called *sistrum* (*pl.* 11, *fig.* 45) ranks prominently among these: it was a sort of rattle, whose sound had a symbolic or more probably a magical signification, and therefore we frequently find it depicted in the hands of musicians. Castanets (*fig.* 26), often artistically carved, form the transition to regular instruments of percussion, among which the most prominent are drums (*fig.* 30) of different sizes and forms, which were beaten either with the hands or with sticks. (See *Frontispiece*, *fig.* 4.)

Metal cymbals and tambourines also occur, the latter round or square, generally in the hands of female dancers. Of wind instruments they had small fifes, single and double wooden flutes (*figs.* 28, 29), and metallic trumpets such as are mentioned in the Bible (Num. x. 2-10). In the pyramid tombs of Memphis among other stringed instruments is pictured the harp, as yet a simple bow with strings, to which in course of time a bridge, a sounding-board, and tuning-pegs were added. It was further developed in various forms and sizes, and the splendor of its decorations (*fig.* 24) shows how highly this instrument was regarded. An ancient Egyptian lyre (*fig.* 27) resembling later forms is now in the museum of Berlin. Besides these, instruments in the shape of a lute occur (*fig.* 25), which, as well as the lyre, were played with the plectrum.

The Music of the Egyptians has of course been lost, unless some remains of it survive in the partly monotonous, partly noisy, melodies of the Orient of to-day. It seems to have proceeded but little beyond a rhythmic tinkling. They knew the art of playing several instruments together, and in representations of musical parties there are persons portrayed who are engaged solely in beating time with the hands, and whose disproportionate number indicates the importance of their occupation. The fact that musical instruments are frequently found in the tombs of private persons is an evidence that a taste for music must also have prevailed among the upper classes. (See *Frontispiece*, *fig.* 6.)

Games.—The Egyptians had other means of entertainment: they played games with balls, hoops, and rods; even in the palaces of the

Pharaohs, as mentioned (p. 127), there was a kind of chess game which was played with wooden figures. Dolls with movable limbs, wooden figures of animals, leather balls, and marbles have been found in the tombs of children. The little ones were permitted to play in the forecourts of the temples.

Religion.—The acme of the Egyptian's life was, however, his religious worship. In order to comprehend him in this respect we must first cast a glance at his mythology. We can scarcely doubt that in Egypt, as among almost all nations of antiquity, an ancient sun-worship, together with human sacrifices, formed the foundation of the religious system. This retained its barbarous and often very repulsive form throughout the extensive Asiatic regions. But in the limited valley of the Nile an exclusive and intelligent priesthood developed it, by the addition of cosmological theories and historical facts, into a mystic system which gave a symbolic meaning to their own services and an ethical basis to the participation of the people.

Even in later times the priest sealed the horn of the sacrificial ox with a ring on the stone of which was engraved the image of a man tied to a stake and threatened with a knife. The head of the animal was then thrown into the river, with the imprecation that all the misfortunes that endangered Egypt should go with it. But it was impossible, on account of the vast growth of the mythology, that the people should reverently retain the entire circle of legends, even though they believed them.

Different places had their local deities, which, however, did not prevent the coming together of numerous visitors, even from great distances, to celebrate the feast of some popular god. The veneration of animals, for which the Egyptians were upbraided even in ancient times, had a very innocent origin. In accordance with the usage of hieroglyphic writing, an animal, such as the crocodile, cat, etc., represented the initial letter of the god's name. In time these animals came to be considered as living reminders of the gods, then symbols and representatives of them, and finally they themselves were deified.¹

Out of this grew the custom of distinguishing more definitely the statues of the gods, which in consequence of the undeveloped state of art were not clearly defined by their sculpture. This was done by interweaving the hieroglyphics of the gods with their head-dress or by placing upon them the heads of their sacred animals. Thus, for instance, the god *Sebak* is pictured with the head of a crocodile, because its Egyptian name, *Suki*, begins with the same sound as the name of the god, and its image was consequently adopted to represent the letter S. It followed from the

¹ This is a doubtful explanation of the origin of animal-worship among the Egyptians, which is ascribed by Duncker and other writers to the profound impression made by the certainty and regularity of animal instincts and habits, and their accordance with the general uniformity of physical phenomena in the valley of the Nile. But animal-worship was not peculiar to the ancient Egyptians. It is considered by some anthropologists to have existed among all races at a certain stage of development. Whether it can be sufficiently accounted for by the system of "totemism" is a debated point. (See Tylor, *Primitive Culture*, vol. ii. p. 213 *et seq.*)—Ed.

reverence of local deities that animals representing them were sacred in certain parts of the country, while they remained unnoticed in others. Thus in Thebes no sheep, but goats only, were sacrificed, whereas in Memphis the reverse was the case.

The outlines of Egyptian mythology are briefly as follows: The original cause of all created things was *Amon*, or *Ammon*, "king of the gods" and "master of the heavens and of thrones," as he was called. He was represented with the head of a ram, and was particularly venerated in ancient Thebes, in Meroë, and in the oasis of Siwah, where he had a famous sanctuary and an oracle. As the eternally-concealed and mysterious one, Ammon revealed himself to men in the persons of four other creative deities.

Net, or *Neith*, represented primitive matter: she furnished the material for the formation of the world, and the heavens, the sun, and the earth came from her. On her shrine at Saïs, where she was especially worshipped, the inscription was as follows: "I am all that was, and is, and is to be, and no mortal hath lifted my veil." *Neph*, or *Kneph*, represented as a god the force acting in this original matter, or the spiritual part of Ammon, and as such he also took a principal part in the creation of the world, and was believed to be the creator of the gods and of mankind. He was particularly worshipped in Upper Egypt, and had a large temple in Esneh, where Net was enthroned at his side.

The two other members of the tetrad were *Pascht* and *Sebak*, "space" and "time." *Pascht* was represented with a cat's head and the solar disc, around which the uræus was wound, similar to the goddess *Tefenut* (*pl.* 14, *fig.* 3); *Sebak* (*fig.* 10) with the head of a crocodile, above which extended the horns of a ram and two feathers, with the solar disc between and the snake at both sides. *Pascht* was chiefly worshipped in Bubastis, where capital punishment was inflicted for the crime of killing a cat; *Sebak* at Arsinoë, where a tame crocodile was kept in his honor. To these supernatural powers innumerable working and governing natural forces were added, which, though of inferior rank, in their special personifications resembled gods.

Among these forces *Ptah* represents "warmth," the basis of all generation, *Ment* the giving principle, and *Mut* the receiving principle. *Ra* is the "sun-god," and from him the kings called themselves "son of the Sun," or even simply "Ra," the Sun (whence, by the addition of the article *Ph-Ra*, was derived the word Pharaoh). *Pe*, *Anuke* (both feminine), and *Jah* (masculine) were the deities of the firmament, the earth, and the moon. *Sate*, the daughter of Ra, was the "goddess of the day." *Hathor* (*Athor*) (*fig.* 7), who was highly venerated throughout Egypt, was the "goddess of the night," and at the same time the "goddess of love" and the "lady of the dance and mirth." Her symbolic animal was the cow, for which reason, probably, she is represented with the head of a cow, or at least with the horns of one enclosing the solar disc.

It is difficult to discern the original signification of the ibis-headed

Thoth, or *Taati* (*pl.* 14, *fig.* 8), as when transferred to the Osiris cult he assumed an ethical character and had assigned to him the task of weighing at the "Judgment of the Dead" the deeds of man and noting the result, on which account he was especially venerated as the representative of truth.

Nud and *Seb* (*figs.* 1, 4) were supposed to be the youngest of the older gods, and were perhaps added in order to make a connection with the system of the younger gods, at whose head stood their children *Osiris* and *Isis*. With the latter, as we have stated in referring to *Thoth*, an ethical religion supplanted the merely natural one—not actually destroying it, but permeating and transforming it—and spread widely over Egypt. Hence arose a connected body of myths which have come down to us in a confused condition, but which plainly sought to glorify, if not the first teacher of civilization, its introduction and establishment, and to make its requirements the law of mankind.

In the myth of Osiris, dualism—the antagonism between good and evil which belongs to the more important of the old Asiatic religions—makes its appearance; for that god, after laboring for twenty-eight years for his country, was outwitted and killed by his hostile brother *Set*. He left to his family, especially to his wife *Isis* (*fig.* 5) and to his son *Hor*, or *Horus* (*fig.* 11), the task of avenging this murder, and made it a duty for his worshippers to participate in the battle and thus to become enlisted on the better side.¹

The attempt of the later Pharaohs to restore the ancient worship of the Sun was evidently a reaction against the Osiris cult; but it met with no response from the priests or from the people. Figure 14 shows the god Osiris on his throne, and before him King Sethos with offerings in both hands. The animal representative of Osiris was the *Apis* (*pl.* 12,

¹ The account here given of the Egyptian religion is based chiefly on the myths, which formed, as in all such cases, the most prominent feature of the system. It is not, however, that which best exhibits the fundamental ideas of the people in reference to a divine power ruling over the moral world. These are to be found in the "Hymns," of which a considerable number have been preserved, some of them at least dating from a very early period. On the evidence thus afforded, the eminent Egyptologist M. Emmanuel de Rougé does not hesitate to assert that "the first characteristic of the religion is the Unity of God, most energetically expressed. But how reconcile," he proceeds, "the Unity of God with Egyptian polytheism? History and geography will perhaps elucidate the matter. The Egyptian religion comprehends a quantity of local worships. The Egypt which Menes brought together entire under his control was divided into nomes, each having a capital town: each of these regions had its principal god, designated by a special name, but it is always the same doctrine which reappears under different names. One idea predominates—that of a single or primeval God." This doctrine, he adds, was in existence more than two thousand years before Christ; "but polytheism, the source of which we have pointed out, developed and progressed without interruption till the time of the Ptolemies."

A somewhat different, and perhaps more philosophical, view is set forth by Le Page Renouf in his able monograph on the Egyptian religion (*Hibbert Lectures*, 1880). He finds that the Egyptian word for deity, *nutar*, has the primary meaning of "force." Each of the great deities, Ra, Horus, or Osiris, is to be regarded as the divine power manifesting itself in a certain way. Each of them, in the Hymns specially addressed to him, is worshipped as the Supreme Being, the *one* God. This mode of conception, which is not peculiar to Egypt, has received from Max Müller the name of "Henotheism" (indicating *oneness*, but not *singleness*, of God. See Vol. I. p. 159). It was an approach to monotheism, which, however, according to Renouf, was never reached by the Egyptians, and, instead of developing into a pure theism, their religion assumed the essential character of pantheism.—ED.

fig. 15), a black bull with a white triangular spot on the forehead and a knot under the tongue in the shape of the scarabæus. As several cities contested the distinction of being the real burial-place, and consequently the proper sanctuary, of the god, the Apis was kept in the temple of Ptah at Memphis (the capital), and was there honored with great festivals. After death he was embalmed—an honor which was also paid to other sacred animals (*pl. 12, figs. 11, 12*; see p. 135).

The cow was sacred to Isis, and the ass to Set. The hatred against the latter god was vented on his animal. Nevertheless, Set always ranked as a god, and was regularly worshipped as such. He was regarded as the great destroyer, who can never be overcome, who dwells in darkness, and who seeks to unsettle all that is established.¹

Besides those mentioned, the Egyptian mythology contained numerous other deities, of inferior rank; for instance, the jackal-headed *Anubis* (*pl. 14, fig. 6*), who assisted in finding the corpse of Osiris, and others, of whom, on account of their characteristic representation, we have inserted pictures copied from old Egyptian paintings. The images of the gods are represented in divers colors. They always hold in one hand a long staff which served as a sceptre, the point of which is decorated with a lapwing's head, while the staff held by the goddesses is decorated with a lotus-flower. In the other hand they carry a T-shaped cross on a handle, the so-called "Nile cross," a symbol of life and fecundity.

The ethical character of the Osiris cult is especially apparent in the belief that he continues his office of sovereign in the lower world and there rules as the judge and rewarder of the dead. The whole minute system of the rites paid to the dead, which will be hereafter described (p. 136), was connected with this belief.

The Religious Ceremonies were in many respects related to the funeral observances. Pompous processions on the water and on the land, in which the images of the gods were carried in costly temple-shaped shrines or in boats (*pl. 11, fig. 13*; *pl. 14, fig. 16*), made the public worship brilliant and impressive. Secret rites were performed in the temples, and the ritual was adorned by the use of costly utensils, such as censers and vessels for offerings (*pl. 11, figs. 14-19*).

Places of Worship.—The land was filled with places of worship. The great temples, with their elaborate establishments, were supplemented by smaller structures of the same nature (*pl. 12, fig. 7*). Wherever the Egyptian stood or went, before him were the external signs and displays of his religion, impelling him to devotion. Everywhere he saw the images or the emblems of his gods, either occupying their fixed places or carried about as standards (*pl. 11, figs. 20-22*).

The Priesthood.—The mysteries indeed remained an exclusive posses-

¹ Set, although the antagonist of light in the myths of Ra, Osiris, and Horus, was not a god of evil. "He presents a physical reality, a constant and everlasting law of nature, and was as true a god as his opponents." It was not till the decline of the empire that he was regarded as a demon (Renouf, *The Religion of the Ancient Egyptians*).—ED.

sion of the priestly class. But by gratifying the senses of the people the priests were enabled during the lapse of thousands of years to maintain the orthodox creed, to overcome the attempts of some kings to break their power by the introduction of new systems, and to survive even the insolence and coercion of foreign conquerors, like the Persians. The Greeks and Romans were shrewd enough to complete their conquests by union with the priests; and the Romans did not disdain to lean for support on the Egyptian religious structure when their own fell into ruins.

The King.—It was natural that the life of the king, who as chief priest and representative of the Deity stood in so close a relation to the religious system, should be passed in an established round of ceremonials, by which he was held fettered by the completest rule and constraint, while it allowed him at the same time to be exhibited to the eyes of the people in almost supernatural glory. Whether making his offerings as priest or occupying the throne as supreme judge, whether carried about in the processions as king or mounted in his war-chariot as commander, he was always surrounded by the greatest pomp, which changed its symbolism with the varying occasion.

Embalming.—The Egyptian believed that after the lapse of from three to ten millenniums the departed intelligence would return to its body, to which it would be reunited for all eternity. Hence the methods adopted for preserving the corpse and for rendering inviolate the place of its sepulture. We give in brief the statement of Herodotus as to the most approved method of embalming: "The brain is in part removed through the nostrils by means of a crooked bronze implement, and in part by rinsing with drugs. The viscera are drawn out through an incision made in the left side with a sharp flint knife. The abdomen is cleansed by washing thoroughly with palm wine, and sometimes by a subsequent infusion of pounded aromatics; after which it is filled with bruised myrrh, cassia, cinnamon, and other spices, and the opening is sewed up. Next, the entire body is plunged in natron and kept covered with it for seventy days. It is then washed, swathed from head to foot with bandages of fine linen smeared with gum, and returned to the relatives, who enclose it in a wooden case shaped into the figure of a man." Figures 9 and 10 (*pl.* 12), copied from the originals in the museum of Berlin, show the present condition of such embalmed corpses.

Besides human bodies, the Egyptians frequently embalmed their sacred animals (*figs.* 11, 12), especially the *Apis* if it had died a natural death, and the *Ibis* nearly always. Numerous mummies of sheep are found at Thebes. The embalmed animals were enclosed in linen or woollen bandages, over which were fitted fine thread nets. A kind of embalming was followed also with smaller animals, Mammalia, Amphibia, etc.

The embalmers must have been a numerous class, with profitable employment, as it has been estimated that during the twenty-seven hundred years ending with 700 A. D., when embalming ceased, the average yearly number of embalmed corpses was above one hundred and fifty-five thou-

sand, making the total for that period about four hundred and twenty millions (G. Rawlinson). Diodorus, who may have exaggerated the cost of embalming, gives the expense of the most approved method as a talent of silver, or nearly twelve hundred dollars, and the expense of a secondary method as one-third that sum. There was also a third and much less expensive method employed for the poorest classes.¹

Funeral Ceremonies.—The embalming formed the beginning of the funeral ceremonies. The corpse was, according to established rules, bewailed by women, consecrated by the priests of the lower world, who wore the *anubis* or "dog mask," placed in a richly-ornamented receptacle on a bier (*pl.* 11, *fig.* 23), and brought to the bank of the Nile, accompanied by relatives and by priests of the sacred bull. Having in similar manner been conducted across the river, it was delivered to the Judges of the Dead, and, after its lot for all eternity had been proclaimed by the priests in the name of Osiris, it was interred in a mummy-coffin in some burial-place on the west of the Nile.² Figure 17 (*pl.* 14) shows the exterior of such a coffin covered with symbolic paintings, after the original in possession of Colonel von Gemming of Nuremberg, while Figure 18 shows the bandage-enveloped mummy, the lid of the coffin being removed. Figure 16 portrays, after an old Egyptian "Book" or "Ritual of the Dead," the crossing of the deceased in the sacred ship to the tomb. At the head of the corpse stands Nephtys lamenting, and at the feet Isis her sister. A priest offers incense in a censer, of which we give a larger illustration on Plate 11 (*fig.* 16).

Behind the mummy was carried a box or case (*pl.* 12, *fig.* 13), containing four vases in which were deposited the different parts of the viscera, removed in the process of embalming, and treated with medicaments. The vessels containing them were placed with the coffin in the tomb. Sometimes, however, the viscera were replaced in the body.

The Egyptians believed firmly in a rigid judgment beyond the tomb, for they thought that shortly after the separation of the soul from the body, the former, before it could enter into the peaceful realm of the departed, had to appear before Osiris, the stern judge of the lower world. Here its life upon earth underwent a close scrutiny, and according to the

¹ This matter is mainly additional. The subject is simply referred to in the original work.—ED.

² The water which the funeral procession is depicted as crossing was not the Nile, but the so-called "sacred lake" of the *nome* in which the interment took place. In regard to the judgment-scene, it is necessary to distinguish between that which is represented as taking place in the "under-world," as hereafter described, and the account given by Diodorus of an actual trial, before forty-two judges, whenever any person thought proper to bring an accusation against the deceased. "If it could be proved that he had led an evil life, the judges declared accordingly, and the body was deprived of the accustomed sepulture; but if the accuser failed to establish what he advanced, he was subject to the heaviest penalties." Under such conditions we may believe that charges were not often instituted. In fact, one is tempted to believe that, while this custom may have existed at some early period, the tradition alone was preserved at the time when Diodorus wrote. In some of the representations of the "judgment" in the presence of Osiris, forty-two figures are ranged together, which has been cited as a confirmation of the statement of Diodorus; but as the figures are those not of men, but of deities or demons, an opposite inference should perhaps be drawn.—ED.

degree of its past piety or wickedness was the amount of reward or punishment awarded to it.

Figure 15 (*pl.* 14), represents the "Judgment of the Dead." Osiris sits enthroned beneath a canopy; opposite to him *Ma*, the "goddess of justice," ushers in the dead. In the centre is erected a balance, one scale holding a vase with handles, a symbol of the heart, while the other supports the image of truth. Horus and Anubis, the sons of Osiris, are engaged in weighing, and watch the swaying balance, while from above it is guarded by the dog-headed ape, *Hapi*, the symbol of measure. In front stands the ibis-headed *Thoth*, the scribe of the gods, to record the result, and before him, in the form of a female hippopotamus, sits *Amam*, the accuser of the dead, who, if they have lived righteously, are vindicated by Thoth. An altar and offerings are placed immediately before the throne of the god.

The Tombs and their decorations fall within the province of Architecture and Art (see Vols. III. and IV.), but we present a view of the interior of the great Pyramid of Cheops (*pl.* 12, *fig.* 1), which will give an idea of the deep concealment in which the Pharaohs preferred to lie buried. The mummy-receptacles were frequently enclosed in outer cases, and these again in others, while those of the nobles were enclosed in sarcophagi with richly-sculptured ornaments.

The pyramids are not sufficiently explained by calling them "the petrified dreams of the Pharaohs," for every citizen imitated them as far as he was able in his own tomb. Indeed, the subject, making use of the freedom granted him by death, in this respect surpassed his sovereign. As already mentioned (*p.* 123), he carried his whole life with him in pictures to his tomb. There, freed from the influence of social repression and reconciled to his gods, he was permitted the free enjoyment of his memories, while the king could only surround himself with mythological or astronomical representations. It almost seems as though the subject desired to protest from his tomb against that tyranny of society which had trammelled his individuality, and while in the company of his gods strove to recall the events of his earthly life.

Thus their tombs were to the Egyptians an eternal assertion of individuality. For all these artificial piles, these gigantic structures, colossuses, obelisks (*fig.* 2), granite mausoleums, etc. were in reality only attempts to escape oblivion and to announce to all future generations what this or that one in his little moment had thought, felt, and accomplished. This impulse had much to do with the influence of Egyptian civilization, which first raised men from the condition of empiricism—the mere haphazard exertion of their energies—led them from an instinctive to a reflective existence, brought into play ideas of taste and form, and thereby impressed on all human history the stamp of intellectuality. Though the Egyptian was far from having subdued that all-prevailing duality by which humanity is swayed, the Sphinx, the symbol of this dualism, stood only at the entrance to his temples. He piled up grotesque figures as

representations of the mysteries which surrounded him, but it was he who thus propounded these mysteries and thereby gave a clue to their solution. The riddle of existence was not to be solved in that stage of incipient progress, but the mode in which it was conceived and presented by the Egyptians must be regarded as having opened the path and pointed out the direction for all succeeding ages.

Hieroglyphics.—We close our considerations with a reference to the hieroglyphic writings (*pl.* 12, *fig.* 16), which have at length been successfully deciphered. Their arrangement is based on the simple principle heretofore intimated (*p.* 131); namely, that every sign (animal, utensil, etc.) represents the initial sound or a consonant of its Egyptian name. This system underwent modifications in the course of its employment, and its development in modern times was rendered extremely difficult by the fact that in order to select the determinative letters it was necessary to discover the words, and consequently the lost language had first to be recovered. But it is scarcely credible that with the ancient Egyptians themselves the hieroglyphics constituted a secret writing to the extent that is commonly assumed.

The Cursive Writing (*fig.* 17) which was used by the side of the hieroglyphics was scarcely better known to the people, though it was employed for the common purposes of every-day life. This is the more likely as the cursive writing originated from the other by the change of the hieroglyphic signs into letters. It is known that the Greek letters similarly originated from the same source, and the Latin and modern alphabets were derived from the Greek.¹

In explanation of Figures 18 and 19 (*pl.* 12) we may remark that in the rows of hieroglyphics the names of the kings are distinguished by an oval border. What seems like a calendar in Figure 20 is indeed part of an astronomical table copied from the ceiling of a royal tomb at Thebes. The whole consists of twenty-four squares, one of which is represented; each square contains twelve or thirteen rows, each row beginning with a day of the calendar, following the course of the months; the stars have reference to their own respective positions in the different seasons. The Egyptian numeral system is easily deciphered from this fragment.

Kingdom of Ethiopia.—A reflex of Egyptian civilization was manifested in the adjoining kingdom of Ethiopia, where, however, as we learn from highly-colored monuments that have been preserved, it lost its symbolic character and passed into meaningless show. This kingdom, the ancient Cush of the Bible (Isaiah xi. 11), began on the north of the pass of Syene (Asswan), and included modern Nubia, Abyssinia, and Kordofan.

¹ The Greeks, however, did not derive their alphabet directly from Egypt. They borrowed the letters of which it was originally composed from the Phœnicians, who should perhaps be considered—as they were considered by the Greeks—the true inventors of alphabetical writing. The germ of this invention lay in the Egyptian system, but it was the Phœnicians who developed it, and that in a form which admitted of its general application.—ED.

Cave-dwellers were yet to be found within its borders, while here too the fertile shores of the Nile invited settlements; but the great variety of races did not promote an independent civilization. The two kingdoms, always in contact, whether friendly or hostile, exchanged their peculiarities, Egypt predominating in intellect and Ethiopia in material power. The invasion of the Hyksos originated in this country;¹ the twenty-fifth Egyptian dynasty consisted of Ethiopian kings, some of them famous; while, on the contrary, the temple ruins at Ipsambul (Abu-Simbel) and other places in the south show how far Thothmes III. and Rameses II. penetrated into Nubia.

The ecclesiastical state Meroë, whose riches often tempted but always escaped the conquerors of antiquity, and which subsisted under the government of queens until after the birth of Christ, was a peculiar offshoot of the Ethiopian kingdom. We present on Plate 10 (*fig. 9*) the portrait of one of these queens (of whom mention is made in the New Testament, Acts viii. 27), copied from a painting on the exterior wall of the temple at Naga. She belongs to the Roman epoch, but wears the Egyptian head-ornament and carries a palm-branch as a sceptre. An Ethiopian of rank of an earlier period (*fig. 17*) is from the celebrated painting of the Migration to the Oasis of Jupiter Ammon. The usual dress of the common people was a loin-cloth and a woollen wrap, as we may infer by analogy from what prevails at present in Numidia.

That Ethiopia was not affected by Egyptian influence alone is shown by an idol with four arms and three lion-heads (*pl. 14, fig. 13*) which is from the temple at Naga, and which is rather indicative of Indian derivation. But as its civilization was in any case only a reflection of foreign peculiarities, we may dispense with a more detailed description.

Foreign Relations.—The position of the Egyptians in relation to their Asiatic neighbors was of a different character. The latter, although conquered by the Egyptians, as is proved by the precious objects included in the tribute which was paid and carefully recorded and portrayed by the conquerors, were in certain respects superior to their masters and capable of influencing their civilization. There is no doubt that the great tide of Semitic peoples that moved from Central Asia westward, and crowded the later Egyptians into the Nile Valley, must have left numerous tribes behind in the regions passed over. These tribes settled down or continued their nomadic life in accordance with the favorable or unfavorable conditions of the country. To some extent, especially when they reached the sea-coast, they engaged in commerce, and brought the various arts connected with commercial activity to a high degree of development. While the peculiar nature of North-eastern Africa favored the growth of a great centralized state and a high social, religious, and political development; and consequently led to the civilization which we have described, entirely

¹ The Hyksos are commonly believed to have entered the country from the east, and to have belonged to the Semitic race. The dynasties known by their name are reckoned as the thirteenth to the seventeenth (2100–1800 B.C.). The Ethiopian invasion belongs to a much later period (730 B.C.)—Ed.

different conditions prevented the inhabitants of Western Asia from developing in like manner. These, while they separately grew strong and developed a warlike character in their struggles with the fierce aboriginal inhabitants mentioned in the Bible, lacked cohesion, and consequently became the victims of internecine strife and the prey of foreign conquerors. We find numerous representatives of these tribes portrayed on the Egyptian monuments, with their appearance distinctly characterized, but they are designated by names which give little clue to their origin. Their garments indicate luxury and great effeminacy (*pl.* 10, *figs.* 15, 16), and their lighter or darker color suggests a more northern or southern abode. Figure 16, designated as "Temehu," shows on the nude parts of the body a painting or tattooing, traces of which we often notice in those distant times.

Conclusion.—We have thus presented a brief outline of the world's oldest civilization, which, though long extinct, must continue to be an object of interest from its influence on the subsequent course of human development, and which in recent times has received fresh light in every department without losing the charm of mystery that has always attached to the name of Egypt.

II. THE ASSYRIANS AND BABYLONIANS.

THE civilization which claims our attention next after that of Egypt had its seat in the countries bordering on the Euphrates and the Tigris, whence it gradually spread over the larger part of Western Asia, embracing within its influence most of the tribes and nations belonging to the Semitic race, and affecting indirectly members of other races. It is, however, especially associated with the history of Babylonia and Assyria. The former country comprised the lower valley of the Euphrates, including the region between the two rivers from the point where they approach each other to where they originally emptied, by separate channels, into the Persian Gulf; while the latter lay beyond the Tigris, having this river for its western boundary, and stretching eastward to the tableland of Iran and northward to the highlands of Armenia.

The existence at a very early period of a Babylonian monarchy is known to us from ancient writings and on the evidence of recently-discovered relics and inscriptions. This kingdom is now commonly spoken of as that of the Chaldæans,¹ or old Babylonians, and its origin is ascribed to a period between 3000 and 4000 B.C. It was by the people of this state that the first advances were made in agriculture—for which the exuberant fertility of the soil offered the best opportunities—in astronomy, in writing (by means of the cuneiform system), and in many of the arts and handicrafts that betoken a condition of regular and diversified industry.² The religion commonly known as the worship of Baal had the same origin, and in a debased and perverted form—which sanctioned the practice of

¹ Chaldæa was properly the name of the district close to the Persian Gulf in which the Babylonian civilization is supposed to have sprung up, and at different periods the Chaldæans appear to have exercised an ascendancy over the whole country. Hence the indifferent use of both names to designate a kingdom the nature and boundaries of which varied from time to time, so that its continuous history is not only obscure, but doubtful. The Chaldæans of a later period, whose reputed "wisdom" is mentioned in the Bible, were a priestly or learned class. They were the repositories of the astronomical lore which was believed to have originated with the shepherds of Chaldæa, and which had been perverted by its subsequent possessors to the purposes of astrology.—ED.

² The discovery and decipherment of numerous monumental records, especially certain trilingual inscriptions, have led to the belief that this civilization originated with a Turanian people who had preceded the Semitic race in the occupation of the country extending southward from the Caspian to the Persian Gulf. The early existence of such a people in both Media and Babylonia, and its continued possession of Elam (the later Susiana), which maintained its independence as a separate kingdom down to the period of the Assyrian conquests, are sufficiently established. Babylonia was then divided into two sections, Accad and Sumir; and it was here, as we are told, that this primitive civilization, including the invention of the cuneiform writing, received its highest development, and was communicated to the Semitic nomads, whose gradual encroachments ended in their supplanting the original inhabitants. Such details, however, are matters of inference or conjecture rather than assured knowledge. Whatever impulse the Semitic nations may have received from a race with which they were constantly in collision, their civilization was of too distinct a type and too widely spread to have derived its origin and special character from such a source.—ED.

sensual and revolting rites and customs—spread westward to the shores of the Mediterranean, exerting its corrupting influence over the Jewish nation, from which it was with difficulty expelled, as well as among the Greeks, especially those of Asia Minor, and even the Romans.

Assyria is supposed to have been colonized from Babylonia about 1900 B. C. The identity of race is, at all events, indisputable, as well as the general similarity of manners, customs, and ideas. But the perpetual conflicts of the Assyrians with the tribes of the table-land and mountain-regions developed a warlike spirit and martial aptitude of which there had been no previous example. From an early period Assyria maintained a long struggle with Babylonia, which asserted a right to overlordship, and in the thirteenth century B. C. it achieved complete independence. Thenceforth it entered on a career of military expeditions in which the acquisition of spoils and the extortion of tribute were more conspicuous features than the actual subjugation of foreign states and territories. The period, however, best known to us—beginning in the tenth century B. C.—was one of constant expansion, culminating in the conquest and absorption of Babylonia (731–710 B. C.) and the establishment of a dominion that extended from the Caspian to the Mediterranean and the Red Sea, and included for a time even Egypt. But the empire thus constructed had no real organization, and lacked all the elements of stability. Enervation and exhaustion supervened, ending in a revolt of the Babylonians and the Medes, and the complete collapse of the Assyrian monarchy, toward the close of the seventh century B. C.

A new Babylonian kingdom succeeded to the supremacy, and under the greatest monarch of the dynasty, Nebuchadnezzar (*Nabu-kudur-ussur*), attained a high degree of power and magnificence through foreign conquests, the enlargement and adornment of the capital, and the construction of viaducts and other public works. It lasted till 538 B. C., when Babylon was captured by Cyrus, the founder of the Persian empire.

The regions watered by the Euphrates and the Tigris, once among the most populous and highly cultivated on the globe, present at the present day a general aspect of desolation. Except in certain localities the land has become a desert, inhabited, if at all, only by nomadic bands of Arabs and Kurds. Scattered over the country are numerous mounds, termed by the natives *tels*, in which the ruins of ancient cities have lain buried for ages. It is from the explorations among these, carried on at intervals during the last half-century, that our knowledge of the civilization that has so utterly perished is mainly derived. Innumerable relics have been found, which are now deposited in the British Museum and other great collections. They include, besides the works of art and other articles hereafter noticed, a vast number of clay cylinders covered with inscriptions in the cuneiform characters, recounting the exploits of successive monarchs, and thus correcting as well as amplifying the details given by ancient writers. Hitherto the work of excavation has been prosecuted chiefly among the Assyrian ruins, but the discoveries throw almost equal

light on both the nations whose kindred origin and blended history entitle us to consider them as one people.¹

Dress.—Plate 15 exhibits the nations now under consideration. The Semitic type can be recognized at once. The climate, varying from hot summers to cold winters, especially in the north in the vicinity of Nineveh, necessitated more complete dress than that which we found among the Egyptians. Instead of the loin-cloth, the Assyrians wore a longer gown-like garment (*figs. 1, 2*), which was of the same form for both sexes and to which the common people were mainly limited. These garments varied in length, and were sometimes fastened with a girdle at the waist. The sleeves scarcely reached to the elbows. Over-garments were a prerogative of the highest classes until in course of time the severity of the general regulation was overcome by wealthy individuals.

The materials were probably linen or cotton and wool, being changed according to the seasons of the year, whose differences were perceptibly felt in some regions of Central Asia. It is scarcely to be doubted that the highly-developed manufacturing skill of the Assyrians and Babylonians utilized the fine hair of the Cashmere goat and the wool of their native sheep. It is even probable that silk had then been imported from China; but the silks as well as the famous laces and the dyed fabrics, particularly the costly purple textures, belonged, as we may well assume, only to people of the higher classes, among whom also the custom of decorating the garment with tassels and fringes was universal.

The distinguishing mark of the court costume was a fringed scarf, which, narrow at first, was widened with the increase of luxury, and was thrown about the shoulders in either single or double folds (*figs. 3, 4*). It may furthermore be presumed that different degrees of rank were denoted by the more or less costly decorations and by the single or double folds of the scarf, as well as by the ornamentation of the gown, which reached to the feet and was edged with broad, bright-colored borders.

Among the officers of the court we recognize a prime minister (*fig. 3*), the vizier of later Oriental monarchs, the overseer of the royal servants (*fig. 4*), the cup-bearer (*fig. 9*), the armor-bearer (*fig. 7*), and the umbrella- and fan-bearer (*fig. 6*). The royal scribes were more limited in the ornamentation of their attire, and the right of wearing the scarf was denied to those of the lower grades. Many officials and servants of the Assyrian court were eunuchs, as is shown by their beardless faces, but we nevertheless find them bearing arms. The scarf was also the foundation of the ceremonial attires of the priests and kings, but it was often enlarged into a mantle-like over-garment.

The king (*fig. 5; pl. 16, fig. 2*), wore an under-garment which was doubtless of the richest material and color. In some representations he wears also a girdle with tassels falling as low as the feet; the scarf is sometimes worn outside the over-garment. Besides the under-garment, the head-dress was a distinguishing mark of Assyrian royalty (*pl. 16, figs.*

¹ The preceding paragraphs have been added by the editor.

4-7). It consisted of a cylindrical cap with projecting point encircled with a golden diadem and adorned with flowing ribbons. It occurs in various shapes, but we are unable to determine whether the differences had any reference to different functions. The king's sceptre was a long staff, probably plated with gold.

The Assyrian king also filled the office of chief priest, and as such wore priestly robes marked with the emblems of his royal rank (*pl.* 15, *fig.* 8). The priestly vesture in general had been developed somewhat differently from the ordinary attire. In place of the cloak, and the long gown which was probably worn as an under-garment, we find in the older representations a garment which is wrapped in diagonal folds around the entire body; this was the extreme development of the scarf costume.

The distinguishing marks of the high priest and of the king as high priest consisted of a necklace decorated with symbolical figures (*pl.* 16, *fig.* 10), probably representations of constellations; a short club-shaped sceptre (*fig.* 11); a hook-shaped instrument (*pl.* 15, *fig.* 8); and a peculiar cap decorated with slightly projecting horns (*pl.* 16, *figs.* 8, 9). The sceptre and the hook-shaped instrument are perhaps only ornamental forms of sacrificial implements. The festival robes varied with the character of each ceremony: sometimes a cloak was worn, and also a decorated apron, probably adopted when bloody sacrifices were to be offered. Perhaps the priests, like those of Egypt, wore on certain occasions the emblems of the animals which represented their gods (*pl.* 17, *fig.* 1).

Already in those early times the Assyrian and Babylonian women were kept strictly secluded in harems, and they are rarely represented on the monuments; we therefore possess no detailed knowledge of their attire, and, apart from the statements of later writers, must rely on conjectures. In general, the cut of the female dress differed little from that of the men, but it is likely that the women used finer materials. According to the few representations we have, when they appeared occasionally in public or performed the by no means absolutely moral functions of priestesses, they wore over the long under-garment a veil hanging down from the head. That they were more addicted to finery than the men needs no assurance or confirmation.

Hair-dressing.—As is manifest from the illustrations, the nations in question were abundantly supplied with the natural adornment of hair, to the care of which they gave great attention. The hair of the head was parted in the middle, brushed back, and arranged in several rows of small curls; the beard was curled about the cheeks and chin, cut square beneath, if we may trust the conventional illustrations, and then twisted into cords or braided and curled in rows (*pl.* 16, *fig.* 3). But this fashion also, if indeed it is anything else than a slight variation of the Egyptian wig, was the high prerogative of the kings and of the nobility.

Except in the case of the kings and the priests, the head on the more ancient sculptures appears without any covering. Herodotus speaks of the head-bands which he saw worn ordinarily by noble Babylonians.

As we learn from the denunciations of the Old-Testament prophets and from the descriptions of Greek writers, the Assyrians and Babylonians were in general given to an excessive care of their bodies. Their costly perfumeries of various kinds are frequently mentioned. They painted, powdered, and adorned themselves profusely with gold and silver, precious stones, and pearls (*pl.* 16, *figs.* 14-21). The foot-coverings of the Babylonians were sandals firmly closed around the heel (*fig.* 29).

Dwellings.—In the dwellings of the Assyrians we remark the same wide differences as in those of Egypt. The gulf between the ruler and the subject was nowhere more manifest than in the vast superiority of the royal palace over the dwelling of the citizen. Those extensive and colossal structures, the ruins of which have lately been unearthed, originally towered over countless rows of small dome-shaped brick huts, which at best were surrounded by a wall enclosing a small court and received light only through the open door. But after security had been established and luxury had increased, the condition of the citizen was improved—an advantage, however, that belonged less to Nineveh than to Babylon, which reached its most flourishing condition after the destruction of the former city.

As we cannot suppose that the old Assyrian monarchs were able at once radically to change the character of the subjugated tribes, and, especially at the extremities of the vast dominions, to overcome their inherited nomadic tendencies, we may infer that the country was in great part covered with tents, which extended even into the capital cities. The monuments themselves confirm this supposition, and show at the same time that the tents were constructed and arranged just as they are at present in those regions. The walled huts mentioned above were really nothing but permanent tents. The old Asiatic house was developed not from them, but from the surrounding wall of the court, which represented better than a tent the idea of a house as a private and well-secured dwelling.

As was the custom in Egypt, the wall, where it fronted on the court, was lined on one or more sides with chambers; over these a flat roof was carried, which was occupied during the day in the favorable seasons of the year, and which in the habitations of the wealthy was covered with an awning, and sometimes had an enclosed compartment like that already mentioned (p. 126). Such was the principle of construction in the private dwellings, and it underwent no change even when the houses became larger and more elaborate. Herodotus saw houses of more than one story in Babylon.

The representations show that the different parts of the houses—for instance, the doors, the cornices, etc.—received architectural decorations; that trees were planted in the courts; that gardens were cultivated adjacently; and that perhaps flowers were already then grown on the roofs. On the exterior the dwelling presented only naked walls, as is still usual in the East, where the people seek to conceal their wealth so as not to

excite the cupidity of their despots. However, the light material of which these walls were built—namely, sun-dried brick—was so friable that no remains of the private dwellings have survived the ravages of time.

Royal Palaces.—The same principle underlies the construction of the royal palaces, although their more elaborate ornamentation somewhat tends to conceal it. But, instead of being hidden from the exterior world, the palaces were made as imposing as possible, and consequently they were always erected on elevated foundations. The enclosing walls, far from presenting an exterior that might escape observation, sought to attract the eye by architectural divisions and symbolical sculptures, and perhaps also by paintings. Yet they retained a heavy, inhospitable, and exclusive character, as they had no openings on the outside for the admission of light. The palace-walls, which often had a thickness of fifteen feet, rose perpendicularly and were finished in rectangular shape above, though the straight lines were sometimes broken by slender pinnacles.

The palaces consisted of separate buildings constructed on terraces of varying heights and connected by stairs. As a consequence, the unity of the collection of immense cubes was one of artistic grouping rather than of real connection. A façade was formed by the arrangement of the portals, on which the human-headed bulls or lions, familiar to the history of sculpture, served as symbolic ornamentation.

The furnishing of these palaces as the residences of the kings and their courts depended of course on the arrangement of the interior. Unfortunately, the remains of the walls which have been preserved are not high enough to enable us to draw any conclusions as to the arrangement of the dwelling apartments even in the lower stories. Guided by the ruins and by written and pictured indications, an attempt has been made on Plate 16 (*fig. 1*) to represent the interior of a hall in a royal Assyrian palace. Whether it be correct in details, especially as regards the windows of the side-walls, must be left undecided. Thus much is certain: that the light entered generally by means of an opening in the ceiling, and that the rooms in which such an opening could not be made, as those of the lower stories, remained in darkness. Even in later times indications of windows are rare, and at all events there is no evidence of other than little peep-holes in the upper stories looking upon the street. It is possible that the openings toward the courts were larger.

From the substructures which remain intact under the rubbish we obtain more definite information as to the arrangements of the lower parts of the rooms. Here the brick walls were faced with large slabs of alabaster decorated with inscriptions and bas-reliefs. Beneath the paved floors drains are still to be found. As an additional furnishing of these apartments we must naturally take it for granted that the palaces contained all that the luxury of that age could bestow.

The material tastes of the people demanded the adornment of all the terminals of the interior with the brightest and gayest of projecting borders. The alabaster facings, which sometimes reached a height of twelve

feet, were painted, as was also the smooth stucco above it. The doorposts afforded space for lavish ornamentation, while the interior passages connecting the rooms with one another and with the court were probably closed with costly tapestries.

Notwithstanding the considerable extent of some of these rooms, they were always narrow, which is probably explained by the fact that no mode of constructing ceilings was known other than by means of wooden beams, whose length determined the width of the rooms. It may be presumed that in harmony with the whole the ceilings were also covered with painted and gilded panel-work. The highest story was more lightly constructed, on the inner side perhaps wholly of wood. The side of the rooms facing the court was open like a gallery, or had, at least immediately under the roof, rows of apertures for air and light.

The above description applies in general to the Babylonian palaces, except that the latter, probably in view of the destruction which the kings of Babylon had themselves brought upon the Assyrians, were surrounded with strong fortifications. The circumference of these seats of royalty was reckoned by miles. The earlier palace lay on the right bank of the Euphrates; the later one was built by Nabopolassar and enlarged by Nebuchadnezzar. The latter erected the so-called "hanging gardens" or terrace-built parks to please his Median spouse Amyitis, who had been accustomed to the sight of mountains. They were, as is known, famous among the ancients as one of the world's wonders, and were ascribed to Semiramis, whose name and career are now considered as belonging not to history, but to mythology.

Diodorus gives the following description of the hanging gardens: "To please a Persian lady these gardens were intended to imitate the mountain-meadows and the tree-gardens of her land. The paradisus (garden) was four hundred feet on every side; it had an ascent like a mountain, and stories one over the other, so that it looked like a theatre. Under the ascent were vaults, which bore the weight of the garden, in moderate height one over the other. The highest vault, which supported the highest layer of the garden, was fifty cubits in height, so that it was of an equal height with the towers of the outer wall (of the citadel). The walls of the pleasure-garden were artificially strengthened; they were twenty-two feet in width; the passages were ten feet in width: the caps of the vaults were covered with stone slabs sixteen feet in length and four feet in breadth. On these were layers of reeds, with a large amount of bitumen, and upon this a double layer of burnt tiles united with gypsum; on this followed a third layer of plates of lead, that the moisture of the earth might not penetrate into the masonry. On the lead plates was then placed as much earth as was sufficient for the roots of the largest trees. This earth was then smoothed and planted with trees of every kind which could give pleasure by their size and grace. In the vaults were various objects of the royal household economy: one of the uppermost contained the machinery by which water was raised through pipes from the river."

The Capitals.—We possess fairly accurate descriptions of the capitals. The plan of Nineveh was a long quadrilateral; the circumference of the wall was four hundred and eighty stadia; the height was 100 feet, and the breadth permitted three chariots to move side by side on the top; it was strengthened by 1500 towers, each 200 feet high. Nevertheless, this bulwark fell before the united forces of the Medes and Babylonians, and Xenophon, who with his army passed (about 400 B. C.) through the ruins of Nineveh, found but few remains of its most prominent structures.

Similar were the proportions of Babylon, but still fainter traces are left of the city, owing to the friable materials of which it was built. Herodotus, who professes to have seen it more than one hundred years after the death of Nebuchadnezzar, describes it thus: "The city is situated in a wide plain and forms a square of one hundred and twenty stadia on each side, so that the whole circuit reaches four hundred and eighty stadia. It is divided into two parts, and the river Euphrates flows through the middle. It is surrounded by a broad and deep trench, which is always filled with water. The soil taken from this trench was made into bricks and burnt; and these were applied, first to lining the trench, and then to building the wall. The wall is 50 Babylonian cubits (93 feet 4 inches) in thickness, and 200 cubits (373 feet 4 inches) in height. The bricks are held together by bitumen mortar, and at every thirtieth course they are separated by a layer of reeds. On the wall are houses of a single chamber, built on each side opposite each other, and yet sufficient space is left between them for a chariot and four to pass. In the wall are one hundred gates, all of brass, with brazen lintels and side-posts. The wall has wings which run along the river on either side, and the banks are cased with masonry of burnt bricks. The city itself is filled with houses of three and four stories. The streets are straight, and those which run down to the river have each a brazen gate in the masonry on the river, through which you pass on steps of burnt brick into the water."

Household Articles.—We derive our information concerning the household goods and utensils of the Assyrians and Babylonians from the oft-mentioned sculptures and also from some original articles which have been preserved among the ruins. Their appearance exhibits much that is puzzling, for, while their art itself, and particularly their symbolical figures, exhibit a pronounced national character and betray the influence of the dark spirit of despotism under which they were created, the house furniture (*pl.* 16, *figs.* 36-45) especially shows in a pleasing manner a somewhat severe yet facile style. The case is somewhat different with the pottery (*figs.* 46-49), which in its more rounded forms indicates a connection with a more ancient industry peculiar to a brickmaking country.

But regarding the furniture, attention has been called, and probably not without reason, to the fact that it was the product not of domestic industry, but of the skill of the subjugated inhabitants of the coasts, whose superior ability is apparent from the articles of tribute pictured on the Egyptian monuments of the second millennium B. C. It must also be

remembered that the furniture and utensils depicted in the Assyrian sculptures belonged only to the temples and palaces, and may have been articles of booty and tribute taken from vanquished nations. It was the custom, moreover, of the conquerors to transport whole populations from their distant homes and thus add to the immediate resources of the empire. We omit a detailed description of the objects depicted in our plates, as they will be easily understood. It is hardly necessary to mention that gold and other precious materials were lavishly used in the decoration of articles for the use of royalty.

Domestic and Social Life.—Little knowledge has come down to us concerning the manner of life in those great Asiatic kingdoms. The pictorial representations in the palaces are confined to the actions and pursuits of the kings, especially to their deeds of war and to their religious functions. The life of the people was probably monotonous, just as it is at present in the East, where its free development is politically and socially impeded, and where thought is directed only to material profit, which is employed solely to drown intellectual consciousness in dreams. In the ancient periods, however, men were kept on the alert by their fear of hostile neighbors, for conquest was generally accompanied by plunder and devastation. Rings were fastened into the lips of the captives, and by these they were led into slavery. If a long resistance had roused the anger of a besieging army, it took revenge on the conquered by cutting off noses and ears, lopping off hands and feet, and plucking out eyes, these being the ordinary modes of punishment in those times. Impaling (*pl.* 17, *fig.* 16), crucifixion, flaying, and burning were also practised.

The reliefs depicted on Plate 17 show us the peaceful side of life in that strange epoch. Figure 9 shows King Sennacherib and his spouse drinking wine in a vine arbor; he is resting on a couch, she is seated in a high chair, and behind both are male and female servants, some of them engaged in fanning away the flies. This relief, discovered in the palace of Kouyúnjik, is especially interesting on account of its female figures. It confirms what has been noted above (*p.* 144), respecting the attire: while the maids wear the long gown-like dress, by no means without ornament, the queen is apparelled in textures similar to those worn by the king; a diadem rests upon her brow, and her hair is curled in the same manner as the king's. The surrounding furniture is also very noteworthy, though the purposes for which it was designed are not always perfectly apparent.

Figure 11 shows the king in his war-chariot, with his driver and his umbrella-bearer at his side; two warriors or guides precede the two-wheeled chariot, to which three horses are hitched abreast; behind it a mounted soldier leads a riderless horse, undoubtedly the war-horse of the king; and the guardian spirit *Feroher* (shown larger in Figure 2) floats above it. Figure 15 portrays the ruler in his attire of peace: he has descended from his chariot, and seems to be conversing with a richly-clad man, who is perhaps a foreign ambassador; behind him stands a eunuch with an umbrella; the chariot is in charge of the driver and a servant in

short dress. Figures 13 and 14 (*pl.* 17) show us the king engaged in hunting: Figure 13 represents him accompanied by a led horse pursuing in his chariot two wild steers, one of which, pierced with arrows, has fallen to the ground, while the other makes an attack on the chariot. In Figure 14 he stands by the side of a slain lion, holding his bow in his left hand, and with his right hand carrying a cup to his mouth; before him stands the fan-bearer; around him are armed hunters, and at the right are two men playing on stringed instruments. The camp scene (*fig.* 12) deserves especial notice: an enclosure, indicated in outline, shows in its four divisions several men engaged in different occupations, apparently kitchen-work; at the side of a tent horses are being groomed and fed; at its entrance a eunuch receives prisoners who are conducted by a soldier. The relief (*fig.* 10) is from a monument of Salmanassar III., and shows the king receiving the homage of a conquered enemy.

Cuneiform Writing.—The specimen presented in Figure 17 is from the monument of Cyrus at Pasargadæ, which is further described on page 152. It is the earliest writing of Central Asia; it has only recently been deciphered, but not so fully as the hieroglyphics. It is read from left to right, and consists of letters which are formed by a group of differently-placed wedge-shaped signs, whose meaning depends on manifold accompanying circumstances. Professor Grotefend and Sir Henry Rawlinson deserve special praise as being their first decipherers. Small cylinder-shaped stones with inscriptions of this kind (*pl.* 16, *fig.* 13), which are frequently found, are undoubtedly to be considered as amulets or seals.¹

¹ No mention is made in the text of one of the most striking features of the Babylonian and Assyrian civilization—the existence, namely, of public libraries in all the large cities, under regulations which testify to their having been generally used. Fragments of one of these libraries are now in the British Museum, and fill one hundred large chests. “The volumes were tablets of baked clay, finely inscribed, or rather stamped, with cuneiform characters on both sides.” Papyrus was also extensively used, but the manuscripts have all perished. The literature thus diffused among the people comprised, according to Professor Sayce, “every branch of learning known at the time. . . . The mythological and religious literature was particularly extensive and interesting. Along with the latter must be classed certain penitential hymns, which may favorably compare with the Hebrew Psalms. Thus in one of them we read, ‘O my God, my transgression is great, my sins are many. . . . I lay on the ground, and none seized me by the hand; I wept, and my palms none took. I cried aloud; there was none that would hear me. I am in darkness and trouble; I lifted not myself up. To my God my distress I referred, my prayer I addressed’” (“*The Ancient Empires of the East.*” See also an article on “Babylonian Exploration,” by John P. Peters, in *Lippincott's Magazine* for March, 1885). Extracts like the above do not seem to bear out the assertion that the Babylonian literature consisted chiefly of translations from “Accadian”—*i. e.* non-Semitic—originals.—ED.

III. THE MEDES AND PERSIANS.

WITH the rise of the Medes and Persians the Aryan race makes its first appearance in Western Asia. These nations inhabited that portion of the table-land of Iran which lies between the Persian Gulf and the Caspian Sea. The part taken by the Medes in the overthrow of the Assyrian monarchy has been already mentioned (p. 142). But their place was soon occupied by the Persians, who, though still more inferior to their Semitic neighbors in most of the elements of culture, retained an inherent vigor and vitality which enabled them not only to seize the supremacy for which the Assyrians and the Babylonians had so long contended, but to establish a more complete and extensive dominion than either of these had possessed. Their religious and ethical conceptions also were of a purer and higher order, and their attainment of power was hailed by the Jews, to whom it brought deliverance from captivity, as the advent of a new era. But their contact with the far more numerous subject-nations tended rather to arrest their own development than to infuse fresh life into an effete civilization. The empire founded by Cyrus and organized by Darius, while superior to those that had preceded it in the system of rule and administration and the consequent preservation of internal peace and order, was essentially of the same Oriental type—a congeries of alien populations held together and controlled by an unlimited despotism, devoid of a common national life and sentiment, and unstirred by any progressive impulses. The title of “king of kings” or “great king,” by which the Persian monarch was commonly designated in the West, seemed not inapplicable to a ruler whose sway extended over a multitude of states and races, and whose court was a scene of corresponding splendor and magnificence. But the hollowness of this vaunted power was instantly revealed when the great Macedonian led a small but well-disciplined army against it and shattered it at a blow. The whole duration of the Persian empire was scarcely more than two centuries (538–330 B. C.), and its place in the history of civilization is in most respects unimportant.

General Characteristics.—Our knowledge of Median and Persian civilization is based almost exclusively on the reports of Greek writers: Media itself has left us scarcely any noteworthy memento. The ruins of Persepolis, besides their particular importance in reference to architecture, furnish information in their sculptures, which resemble those found in the excavations of Nineveh. Both Medes and Persians were receptive rather than creative, as may be inferred from the few productions left to us, and both were subject to the influence of the Assyrians as well as of the Egyptians. A relief figure on a pilaster in the old palace of Pasar-

gadæ, which some consider an image of Cyrus, and which represents a king with a long cloak and the insignia of an Egyptian Pharaoh on his head, exhibits all the peculiarities of Assyrian workmanship. Their fertile country and mild climate soon rendered the Medes effeminate; while the generally severe character of the Persian territory maintained its inhabitants longer in their vigor, but longer also in the incipient stage of civilization.

Costume.—The dress of skins which is characteristic of nomadic peoples, and of which we no longer find traces elsewhere, was distinctly noticeable in Persia, and still prevails in its mountainous districts. It became, in the well-known fur caps, a distinctive part of the national costume. According to Herodotus, the earliest Persian dress (*pl.* 15, *figs.* 11, 12) consisted, for the men, of a belted coat, trousers—which we here meet for the first time in the Old World—a covering for the head, and shoes. As early as the time of Cyrus, who formed his court according to the Median pattern and borrowed also the Median costumes (*figs.* 13, 14), the style of the dress helped to distinguish the rank of the wearer in the manner we have observed in other states. It may, however, be presumed that the great mass of the people retained their ancient mode of dress, and that the costumes represented on monuments are those either of the king himself or of the highest classes.

According to Herodotus, the king presented his favorites with Median garments, but the inferior servants (*figs.* 11, 12) continued to wear the old attire—an evidence that the change proceeded but gradually, for not only had the shape of the garments to be altered, but the very materials had to be procured from abroad. With the extension of the kingdom, however, they copied with equal facility from other conquered provinces, not only as regards dress, but also as to the mode of life in general. They manifested a proneness to effeminacy not less marked than in Assyria and Babylonia. Thus, the people, at least in the cities, appear soon to have laid aside their inconvenient leather garments, and to have used woollen ones instead, though at first retaining the old shape.

The Medes, like the Persians, covered the entire body, wearing both upper and under garments that were wide and long, besides shoes and coverings for the head (*figs.* 15, 16). We sometimes find the robe-like under-garments gathered up at the sides by means of a girdle. An improvement in the dress, so far as we have traced it, was introduced in the fully-developed sleeves. The above-mentioned relief of Cyrus (*fig.* 10), whose symbolic head-dress we have not before referred to, wears the Assyrian cloak-like wrap, but later images of kings show a pronounced Median attire (*figs.* 15, 16). As the cut remained the same throughout, the distinctions of rank could be designated only by means of finer materials, different colors, etc. If silk was already known in Assyria, it must certainly have been known in Media and Persia, and the fine woollen materials heretofore mentioned also played an important part. Xenophon saw among the Persians garments dyed purple, brown, and dark red.

The king appeared in the costliest dye of the time, the purple; on his under-garment a broad white stripe extended from the neck to the feet. His trousers were of crimson red; and the *kidaris*, or conical head-dress, was adorned with a blue and white band, which perhaps was allowed also to his immediate relatives and to the highest officials of state. Heavy soles under his costly shoes increased the stature of the monarch. To the rich jewelry were added a golden staff-like sceptre, a diadem, etc. Besides the *kidaris*, the cylinder-shaped tiara also occurs as a head-covering, and this especially seems to have been decorated with ornaments of gold. Golden embroideries, particularly figures of the sacred birds, the falcon and the hawk, are of frequent occurrence on the royal garments. Fabulous statements are made by the ancients as to the value of the costume worn by the later Persian kings.

It is not essential that we should consider the attire of all the lower ranks; we shall only delineate that of the body-guards (*pl.* 15, *figs.* 17, 18), who received the special attention of the sovereign, but who, apart from their weapons, show no variation from the ordinary Persian and Median costumes as already described. Regarding the attire of the women, we must repeat what we have said in our account of Assyria: we are deprived of a fair knowledge of it by a lack of pictorial representation. But as Median attire had something feminine in its very cut, it may be presumed that there was little difference in the costumes of the sexes. We know that the royal ladies wore as marks of their rank gold-embroidered purple garments, and also the tiara and the diadem.

Palaces.—The Medes and Persians had the advantage of superior materials for their buildings, inasmuch as they possessed wood and stone. But bricks are also found among the ruins. It is stated that Deioces, the founder of the Median dynasty, erected a castle for himself, and thereby laid the foundation of Ecbatana, the subsequent capital of the kingdom. Wishing to surpass the fortifications of other royal seats, which had proved to be insufficient, he surrounded his palace with seven stone walls, which in the end also proved an ineffective precaution. He furnished the interior magnificently, though probably without any improvement on the prevalent style. Favored by the site, the walls and palaces were so arranged that the interior structures always towered above the outer ones; and this arrangement, improved by the free use of colors, produced a surprising and picturesque effect. The walls of the rooms were panelled with gold and silver plate and inlaid with ivory; even the roofs were made of silver.

The original seat of the Achæmenides—the line to which the Persian kings belonged—was Pasargadæ, and Cyrus erected there a royal seat worthy of his newly-acquired power. Cambyses removed the capital to Susa, which was rebuilt in “Babylonian style,” and each succeeding king added his own palace in this more favorably situated place. In the book of Esther we read of the splendor in which “Ahasuerus”—most probably Xerxes—there resided, and of the festivals at which he entertained the

grandees and the people of his kingdom. Darius laid the foundation of the palace-structures at Persepolis, the extent and magnificence of which were intended to express the magnitude and power of the kingdom; but, as we know from the history of Alexander the Great, this palace was destroyed when the empire itself fell.

We must consider that the unlimited riches which the palaces reveal were not the result of general prosperity, but were derived from the annual tributes of subjugated countries. These treasures were poured only into the coffers of the powerful, and most frequently assumed a visible shape in the splendor of the palaces. Their magnificence can thus be accounted for, and we can also infer, as we have already emphatically stated (p. 145), that the life of the people lay far beneath the splendor of the court. This was probably even more the case in Persia than in the kingdoms previously mentioned, which, having reached their attainable limits, were enabled to enjoy repose and to further development. In the original countries of the Persian monarchy industry and commerce seem never to have been developed as among their neighbors, and the riches accumulated by tribute could not adequately compensate for this want.

Dwellings.—Numerous as are the wonders told about the palaces of the kings, we get little information concerning the dwellings of the citizens. Some have sought to trace the ancient buildings in the wooden structures which at the present time are common in those localities, and with the greater reason as Nature herself supplies the materials. The dwelling consisted of a tent-like hut with a single apartment. As regards house utensils, similarly limited conditions prevailed. According to Herodotus, the Persians were scarcely acquainted with the luxury of a comfortable and richly-furnished dwelling.

Government and Manners.—All ancient writers concur in stating that the Persians were a simple people, who passed from the rude life to which they had been accustomed to one of warlike activity, who maintained their position so long as they did not lose their simple manners, and who seem to have fallen more through a sluggish remissness than through effeminacy and corruption. At all events, the Sassanides found in the people long after the fall of the ancient empire useful material for the foundation of a new sovereignty, and we shall hereafter have occasion to refer to the important part performed by Persia in preserving and transmitting ancient elements of civilization.

Although the Persians carried on neither trade nor industry, and although, as we may presume, attempts made in that direction received little encouragement from the kings, who wished to keep up the warlike spirit of the mother-country, we may still assume that the shrewd rulers recognized the requirements of their other provinces and the necessity of promoting their prosperity, if for no other purpose than to increase their own resources. Thus, in contrast with the earlier monarchies, which did nothing but drain the dependent territories and otherwise leave them

to themselves, Persia made a great stride forward in organizing a system of provincial administration which laid a foundation for all subsequent ages.

Darius established a kind of mail service between the different cities of his empire, which served at the same time to render travelling more secure. The roads were measured and stations erected; even topographical maps were used; and in the Kurdish mountains the stone guide-posts leading from Nineveh to Ecbatana are still visible. The same king advanced the construction of the great canals in Egypt, and promoted mercantile enterprise in the coast-cities and agriculture in the interior. When we are told that he imported gold-dust, ivory, and ebony from India and Ethiopia, we may be certain that it was not for the purpose of storing these raw materials away in his treasury.

The famed liberality and systematic bestowment of favors practised by the Persian kings must be emphasized as a civilizing influence, since they had the effect of diminishing the terror which usually rendered the Asiatic rulers inaccessible to their subjects. The justly-condemned system of satraps became destructive to the country only when these royal officers, freed from the strict control of the central government, acted as independent rulers; and even then they prevented the subjugated provinces from destroying one another in internecine strife. On the whole, the administrative system of the Persian empire was highly developed; and it must have been a welcome improvement when the original patriarchal system no longer fulfilled the more stringent requirements of government and a different form of rule had not yet taken its place.

Among the numerous officials, besides the councillors and higher dignitaries, there were fan-, umbrella-, staff-, and chair-bearers to the king; and among the inferior servants physicians, cooks, keepers of the wardrobe, carpet-spreaders, sweepers, table-setters, waiters, stable-masters, porters, etc. Through their close connection with this elaborately organized court the executive officers and administrators of justice were well fitted to spread abroad and carry out the ideas and intentions of the sovereign. For the rest, the government was simply an ancient Oriental monarchy. The weal or woe of each individual was wholly dependent on the grace of the ruler. The magi or priestly class exercised the only counterbalancing power; they regulated the ceremonial functions of royalty and decided questions of law. Though they did not possess the ascendancy of the Egyptian priesthood, their intrigues were more than once of momentous effect in Persian history. Etiquette kept the king secluded, but the practice of filling the principal offices with members of the royal family and of the nobility made his personal influence widely felt. Ancient usage permitted the wearing of arms at court, but persons admitted to the royal presence had to conceal their hands beneath their garments, and when speaking with the king to cover the mouth. The king's immediate attendants wore a hood with flaps attached, behind which the lips at any time could be hidden (*pl.* 15, *figs.* 13, 14).

The system of espionage was first developed in Persia, and the effects of polygamy and the employment of eunuchs were too often felt in the conduct of the government. Notwithstanding the seclusion and reserve of the monarch, he still found opportunity to indulge in field-sports of various kinds. Darius Hystaspes had inscribed as an epitaph upon his tomb that he had been "the best rider and marksman and the first in the chase." The Persian kings were also wont to occupy themselves with agriculture, though in course of time only as a matter of ceremony. They constructed large parks and zoological gardens; and it is narrated that Xerxes ordered a fine plantain tree which he chanced to see to be decorated with golden ornaments.

The institutions of which we have given an account did not reveal their injurious qualities until the last-named monarch and his successors descended from the saddle to purple couches, locked themselves in their palaces, and learned the condition of their kingdom only through reports. Then effeminacy and cruelty combined, and the vices of the Persians became proverbial.

Other Peoples.—From all that has been said we recognize the importance of many peoples of Western Asia who never or only for a brief time attained independence, and certainly not in the manner or to the extent of the states already considered, but who exerted a lasting influence on the civilization of that distant epoch either by their social superiority or through some other favorable circumstance. We must not omit mentioning that in the North and East there were also large states, such as Bactria, Sogdiana, etc., which had a long duration, and probably a peculiar civilization, of which, however, owing to the absence of monumental or written records, we have no certain knowledge.

IV. THE ARABIANS.

NEXT in order the Arabians claim our attention—more, however, on account of their subsequent career than by reason of their early importance.

Origin, etc.—They, like the people of the neighboring countries, sprang from the Semitic stock; and though they branched off more widely from the parent stem, yet, never having been subjugated by other races or intermixed with them, they preserved more faithfully its peculiar characteristics. Their traditions, transmitted orally for centuries, ascribe their origin to the patriarchs of the Old Testament. The sterile character of their country confined them to a nomadic life, such as they still lead, in connection, doubtless, from the earliest times with plundering excursions and attacks. Only the southern belt of the country was adapted to permanent settlements.¹ In that region the kingdom of the Sabeans was established, and, being favorably situated for maintaining communication between other countries, extensive and civilized, it attained by means of traffic both wealth and importance.

Dress, etc.—Both Egyptian and Persian monuments impart information relative to the most ancient dress of the Arabians, and its continuous use appears from the mention of it in writings anterior and subsequent to the birth of Christ. We recognize the original of the modern dress in the simple apparel described, which consisted of a covering for the loins, an upper garment, and a turban-shaped hood (*pl.* 18, *figs.* 1–3). We have no definite knowledge of the female attire. We may readily suppose that the tents of these wandering tribes were not formerly more elaborate than at present. The precious articles that were to be seen in the trading cities of the South were contributions from foreign merchants rather than products of native industry.

Place in History.—The important place which after the lapse of centuries the Arabians occupied in history was due to the wild, untamed spirit of the race, which, concentrated in the mind and character of a single man (Mohammed), and nourished by elements of foreign civilization, gave a meaning to empty forms and a new impulse to stagnant currents.

Neighboring Peoples.—Egyptian monuments as old as the second millennium before our era give us information regarding the inhabitants of

¹ The ancients were acquainted with only the south-western coast of Arabia, and they supposed the interior to be wholly a desert; but the central as well as eastern portions comprise fertile tracts of considerable extent, inhabited, probably from an early period, by a settled population organized in different states. It is scarcely necessary to refer to Mr. Palgrave's well-known *Travels in Central Arabia*.—ED.

Syria as far as to the eastern provinces of Asia Minor. They furnish a list of names for the most part unintelligible to us, which we the more readily omit as they chiefly belonged to peoples who were not organized into states, and who rather shared in the existing civilization than aided its further development. Among them we notice the *Retennu* (*pl.* 18, *figs.* 6, 7), who are distinguished by their magnificent attire and by the costly articles of tribute which they bring. They are thought to have been identical with the later Cappadocians, both because they are represented as dwelling in the vicinity of the Great Sea and because their full dress would indicate a northern abode. Their national development can be inferred from the splendid war-chariots and the golden vessels which they bring as tribute. Toward the other side, southward along the Mediterranean Sea, the warlike Philistines (*fig.* 9) played an important part. But only two of the peoples in this region, the Phœnicians and the Hebrews, had a decided influence on the later civilization of mankind.

V. THE PHŒNICIANS AND THE HEBREWS.

THE Phœnicians are noted in profane history for their commerce, their extensive voyages, and their colonies, while the history of the Hebrews is derived from the Old Testament. Whether the Phœnicians had that influence upon the Bronze Age of the North European nations which has been ascribed to them is very questionable. The important influence of the Hebrews on the spiritual culture of mankind falls wholly within the domain of religion, and can best be judged from that standpoint. Neither of these peoples has left such monumental testimony as would throw light on its exterior life, and we are therefore entirely dependent upon extant written evidences, which, regarding the last-named race, embrace a varied and voluminous literature, treating extensively of subjects both sacred and secular.

Costume.—The Phœnicians, as well as the related inhabitants of Cyprus, are mentioned under the names of *Pun* and *Kefa* on Egyptian monuments, which also acquaint us with their most ancient costume (*pl.* 18, *figs.* 4, 5, 8). A sculpture on the Assyrian palace of Kouyúnjik represents a conqueror receiving the submission of a Jewish family, and shows the Jewish apparel, consisting of a simple, gown-like garment (*figs.* 10–12), such as we have elsewhere noted (*p.* 143) as forming the principal detail of Western Asiatic dress.

The higher classes of the Hebrews, especially after David and Solomon had introduced luxury into the land, were disposed to imitate their prosperous neighbors, with whom they were often at war. They made the gown ("coat," *Gen.* xxxvii. 3; *Exod.* xxxix. 27; *Cant.* v. 3) the undergarment, and added to it the Assyrian wrap and other articles, either adopting foreign styles or developing their native costume (*figs.* 13–16). The priestly garb is to be placed in the same category, for the legally-prescribed tassels and purple cords which were the chief marks of the Pharisees (*fig.* 16) are found on ancient sculptures.

From the neighboring Phœnicians, whose skill they utilized, as in the building of the temple, they learned to prize the purple, and from other nations they acquired a taste for golden ornaments. We even note in an old Persian picture of a Jew (*fig.* 15) that the high cap of the Persians had been adopted. Ancient writers make occasional mention of the luxurious costume and mode of living of the Phœnicians; and the writings of the prophets show that notwithstanding incessant admonitions the Jews imitated other nations, and that the women particularly indulged immoderately in finery.

Isaiah writes: "Moreover, the Lord said, Because the daughters of Zion are haughty, and walk with stretched-forth necks and wanton eyes, walk-

ing and mincing as they go, and making a tinkling with their feet: . . . In that day the Lord will take away the bravery of their anklets, and the cauls, and the crescents; the pendants, and the bracelets, and the mufflers; the head-tires, and the ankle-chains, and the sashes, and the perfume-boxes, and the amulets; the rings, and the nose-jewels; the festal robes, and the mantles, and the shawls, and the satchels; the hand-mirrors, and the fine linen, and the turbans, and the veils" (Isa. iii. 16, 18-24).

Both nations perished—the one in silence, the other in the midst of loud lamentations. There is nothing to prove that the products of their industry bore the stamp of a characteristic and continuous development.¹ We have minute written descriptions of the sacerdotal costumes, but no pictured representations are extant to illustrate them. These costumes developed gradually from a simple to a more elaborate form.

Garments of the Jewish Priests.—The priests and the high priest both wore "linen breeches" or drawers (Exod. xxviii. 42); these were of fine twined linen reaching from the loins to the middle of the thighs. Over this garment they wore a long gown ("brodered coat," Exod. xxviii. 4) of fine linen, which reached to the feet and fitted close to the body; it had sleeves, and was girded to the breast with a girdle made "of fine twined linen, and blue, and purple, and scarlet, of needlework" (Exod. xxxix. 29).

The high priest wore over the "brodered coat" the "robe of the ephod," which was one entire piece of woven work, all of blue, parted where the hands came out, and with an aperture for the neck in the middle of the upper part, having its rim strengthened with a "binding of woven work." It was decorated on the lower edge with tassels in the form of "pomegranates of blue, and of purple, and of scarlet;" between every two pomegranates there was a small golden bell, so that there was a bell and a pomegranate alternately all around (Exod. xxviii. 31-35).

The *ephod*, a short cloak consisting of two parts, covering the shoulders and breast and girded at the waist, completed the costume. The ephod was "of gold, and blue, and purple, and scarlet, and fine twined linen," richly embroidered. On the top of each shoulder was an onyx stone set in gold, each stone having engraved upon it six of the names of the

¹ This was the natural result of their position. Both the Jews and the Phœnicians were cooped up in a narrow territory, with no opportunity for expansion, yet with no secure means of isolation. Each people evinced the inherent force of its character and intelligence in the tenacity with which it resisted absorption, and in its great and permanent influence on the general course of civilization. The Jews, though oppressed, conquered, and dispersed by the great military powers that successively extended their dominion over "Hollow" Syria, maintained the purity of the monotheistic creed of which they alone had the keeping, and which in the end triumphed over all the forms of idolatry in the East and in the West. The Phœnicians, on their narrow strip of coast-line, profited by this situation to make themselves the intermediaries between all the nations of the Mediterranean. The first shipbuilders and navigators, the pioneers of maritime commerce and discovery, they pursued a career of enterprise that stimulated rivalry, but was never eclipsed till Vasco da Gama and Columbus opened a pathway around the globe. Their mechanical skill cannot be doubted, but in the higher domains of art and thought they not only made no independent advance, but their development was early arrested by that exclusive absorption in the pursuit of gain which also, in Carthage especially, stifled the spirit of patriotism and individual freedom and led to the downfall of the state.—ED.

tribes. Where the ephod crossed the breast was an ornament called the breastplate, in which was put the URIM AND THUMMIM, and on the external part of which were set in golden sockets four rows of precious stones, three stones in each row, and upon each of these stones was engraved the name of one of the sons of Jacob.

The *mitre* (turban) of the high priest was of fine linen, and had upon its forefront a plate of pure gold ("the holy crown") engraved with a "writing, like the engraving of a signet, HOLY TO THE LORD." This *יָצ*, *πέταλον*, *lamina*, extended from one ear to the other, being bound to the forehead with strings tied behind, and further secured in its position by a blue ribbon attached to the mitre.

The Architecture of the Israelites differed but little from that of the other Asiatic peoples. Their writings convey to us detailed information concerning it, and the construction of the dwellings in the smaller towns of Palestine remains at the present day unaltered from the style in vogue two thousand years ago. Large and beautiful cities are indeed spoken of in the fifth book of Moses, but they belonged to subjugated races who had been extirpated and whose seats had been for the most part destroyed.

Dwellings.—The conquerors retained for a long time the tents which they had used in their nomadic life; in fact, they never wholly dispensed with them in those regions which, like the eastern boundaries of the territory, were but little favorable to agriculture or to settlement. In the more fertile districts and in fortified places they lived in brick huts which had a walled court in front. But the dark huts served only for the storage of property or as a shelter against the severe weather which was of rare occurrence; the usual abode of the family was on the flat roof or in the court. The latter generally contained a cistern. On the roofs, as a protection against the sun, the Hebrews first used their tents, but later they erected upper apartments which are frequently mentioned in the Old Testament. The law required the roof to be surrounded by a railing, lest accidents by falling should occur.

In the Phœnician cities, where great numbers of people were crowded into a small space, houses of several stories were common, and their showy furniture is especially mentioned. The mode of construction was the same as that described above. Among the Phœnicians, as well as among the Israelites, the simplicity of construction did not prevent a costly style of building and luxurious embellishment. The prophets mention stately palaces and houses of ivory (1 Kings xxii. 39; Ps. xiv. 8; Amos iii. 15).

The primitive hut, consisting of a single room, was but repeated, as we have noted in the case of the Egyptians (p. 126), in ranges around the interior of the court. These rooms were variously furnished and were devoted to different uses, but they were never developed into a connected house in our sense of the word. The simple upper room became, by the addition of others next to it, a second dwelling of lighter construction than the brick ground-story, but still strong enough to furnish on its flat roof an open place of resort. A flight of stairs led directly from the court,

or even from the street, to the roof or to the upper story, which was expressly denoted as the "summer house," in distinction from the "winter house" beneath. The former had, in accordance with its purpose, windows; that is, small air-holes which could be closed by gratings in the Egyptian style or covered with tapestries in the Tyrian manner. When the original court was completely built over, another was often laid out in front; and we find instances of gardens adjacent to the houses.

The walls of the more common dwellings were tint-washed; those of the rich were painted, the interior panelled with wood, faced with marble, or hung with tapestry. The floor was flagged or paved with brick. All entrances were narrow and low; the doors turned on their centre, and were fastened in the extremely primitive manner still prevalent in the East. Our illustration represents a portion of the present town of Nazareth (*pl.* 18, *fig.* 18), and exhibits, as we have already indicated, the appearance of an ancient Israelitish settlement. What has been said of the house-furniture of the Egyptians and Assyrians obtains here also.

RELIGION OF THE WESTERN ASIATIC NATIONS.

We shall now proceed to a consideration of the spiritual condition of the Eastern nations, or, what in those epochs was the equivalent of that condition, their religious consciousness and development.

The worship of the Sun, which we have already noticed (*p.* 131) as being the basis of the religious system of the Egyptians, becomes here more manifest. The Assyrians had extended this worship into a veneration of all the heavenly bodies; among other nations, especially the Syrians, the Moon was included as a deity. The Assyrians represented a number of the principal stars, or more probably constellations, by symbolic figures of animals, in order to render them more comprehensible by the people; for the same purpose the Syrians used direct images, such as the sun-disc and the crescent. The Persians attached themselves more to the earthly equivalents of the supernal powers, such as fire, but, as among all heathen nations, their conception of these deities, being immediately connected with the visible influences of the stars, was dual in its character; they were powers of evil or of good according to their direct effects; their favor was to be gained by offerings; their anger was in like manner to be averted.

It is probable that at some periods of their history all the peoples mentioned offered human sacrifices, and with some the practice prevailed throughout their entire existence. Eventually, the material tendencies of the age demanded palpable objects of worship, and idols were made whose forms varied widely in the different tribes. The temple of Baal built by Nebuchadnezzar contained the golden statue of the god seated on a throne of gold and facing a golden altar. The figure had the head of a bull; at least it was so represented in other regions, as among the Syrians and Phœnicians, with whom its worship, somewhat differently developed, had become prevalent. The peculiar seat of this worship

appears to have been Tyre, but we have only scant information on this subject.

In Carthage the worship of Baal appeared at a later period in its most hideous form. The worshippers heated hollow bronze images of the idol, and cast children into the glowing jaws as a sacrifice, while the priests danced tumultuously about the altar. Women even gave themselves up to public prostitution in honor of this god. True to his original significance as the "sun-god," Baal appeared elsewhere in the form of an archer, as embodying the piercing rays of the southern sun. Particular qualities of this chief god eventually became embodied in other special deities. Thus the Assyrians had a special "sun-god," *Shamash*, a "god of fire," *Adar*, and one of the sea, *Dagon* (*pl.* 17, *fig.* 3).

Besides Baal, special worship was rendered by the Syrians and Phœnicians to *Astarte*,¹ or *Ashloresh*, the "goddess of the moon" (*pl.* 17, *fig.* 7), who, being at the same time the "goddess of fortune, of love, and of generation," was worshipped with many intemperate indulgences and lustful orgies. Her principal sanctuary was Hierapolis, westward of the Euphrates; but her worship spread across Cyprus into Carthage, and became identical in Babylon with that of *Mylitta*, among the Persians with that of *Mithra*, and among the Phrygians perhaps with that of *Cybele*, who was also believed to be the "mother of all life on earth and in the water." Little is known as to the ritual of her worship.

As "lord of the sun"—that is, as that power which annually brings to man that beneficent heavenly body—we find the Assyrian Hercules, *Sardan* or *Sandon*, called *Melkarth* by the Tyrians, generally represented as a gigantic figure in royal attire with a lion under his arm. However, the deities were not always represented in human form nor as a combination of animal and man. It is known that the emperor Heliogabalus introduced into Rome the Syrian sun-god in the shape of a black stone. Occasionally we find portrayed on coins and sculptures religious ceremonies in which the deity is represented as a cone surmounted by some emblem, an eagle, a crescent (*pl.* 19, *fig.* 4), etc.

On Assyrian monuments we more frequently find the "sacred tree" (*pl.* 17, *fig.* 1), a symmetrical arrangement of stem, vines, and leaves or blossoms, which is always the central point of the worship. Our illustration shows at either side of it an eagle-headed, winged figure with the pineapple and hand-basket which often occur in such connection, and

¹ With these in troop
Came Astoreth, whom the Phœnicians called
Astarte, queen of heaven, with crescent horns;
To whose bright image, nightly by the moon,
Sidonian virgins paid their vows and songs;
In Sion also not unsung, where stood
Her temple on the offensive mountain, built
By that uxorious king, whose heart, though large,
Beguiled by fair idolatresses, fell
To idols foul.

MILTON.

which we may consider as having been the principal concomitants of the worship in those regions. Elsewhere we find the sacred tree supported by kneeling figures wearing the priestly cap, or even between winged figures of the bull and the ibex.

On the whole, the Semito-Asiatic mythology¹ has not as yet been clearly explained, and probably it was but partially understood by the people themselves. Besides, it was so devoid of moral elements that its systematic treatment would scarcely appear a worthy subject of historical science. We are far more interested in learning that even in the remotest antiquity opposition and reformatory efforts were made at various points. These attempts were beyond the comprehension of the time, and therefore were not appreciated, yet they were of the greatest importance regarding their influence on subsequent ages. A representative of this movement was found in Zoroaster (the name is quite differently rendered in the dialects of the countries into which his teachings were introduced), who opposed materialistic views with a theory which may be briefly characterized as follows: From the infinite original cause of existence proceed two divine beings, *Ormuzd* and *Ahriman*. The former, as the first-born, created the "world of light and goodness," and the latter, envious of him, created the "world of darkness and evil."

Thus forced to a conflict, Ormuzd called to his assistance the *Amshaspands*, or "Lords of the Light," the *Izeds* as companions in arms of a lower rank, among whom the guardian spirit of the sun first appears, and finally the *Ferothers* (pl. 17, fig. 2), or "guardian spirits of mankind." Ahriman called up the *Devas*, or evil spirits, noxious beings, etc. Every human being is required to declare himself a combatant for the light and to take an active part in the strife. If he live righteously, he will enjoy the protection and approbation of the good spirits. Ormuzd judges every man after his departure from this life, and assigns him either to the kingdom of joy or to the realm of grief.

We thus note how these teachings propounded the dualistic view of the world—a theory which still retains its significance. In ancient times this doctrine obtained a general acceptance only after the Persian power had gained predominance. As a state religion, however, it was first established in the time of the Sassanides, who sought by its means to revivify the nation, which had been rendered effeminate by contact with Greek civilization. From this period also dates the composition of the sacred books, the *Zend-Avesta*, from which we learn more accurately the doctrine of the Parsees. Notwithstanding their decided ethical tendency, their moral influence rarely extended beyond the preservation of the original purity of worship. Light was venerated, especially in its earthly visible shape of fire, and sacrifices were offered on the hilltops or on altars erected in the open air (pl. 17, fig. 8). The contrast between good and evil, between purity and impurity, was altogether a formal conception.

¹ Under this term the author includes that of the Persians, whose religion, as well as their language, testifies to their Aryan descent.—ED.

The representative of another movement was Moses, the leader of the Israelites, who, in consideration of the peculiar circumstances of his people, made prominent his political endeavors, and by proclaiming one supreme God gave to monotheism an impetus which has been of inestimable value to the civilization of mankind. The Mosaic history of the Creation is a manifesto against the idolatry which was predominant in the world. It is this opposition which gives to the national tradition of the Hebrews—beyond doubt an inestimable relic from times of remotest antiquity—its principal value. With the Egyptians and Babylonians everything is developed from the innate powers of the sun, the stars, and the earth itself. Jehovah, on the other hand, appears as the Creator of heaven and earth, as both the originator and the orderer of the world. While the descent of some from the sun and of others from the stars establishes a difference between man and man, creation by the breath of God makes all men equal.

God speaks from Sinai and says, "I am the Lord thy God, which have brought thee out of the land of Egypt, out of the house of bondage. Thou shalt have no other gods before me. Thou shalt not make unto thee any graven image, or the likeness of anything that is in the heaven above, or that is in the earth beneath, or that is in the waters under the earth: thou shalt not bow down thyself to them, nor serve them." It would be impossible to express more sharply the contrast with Egypt, where the worship of numerous deities prevailed, each of which was nevertheless intended to be an image of divine power. In this multiplicity of forms polytheism lost sight of the very idea out of which it had been developed and was transformed into idolatry. In opposition to this was revealed the absolute idea of the pure Godhead, independent of all accident in the mode of its conception.

Moses is the most exalted figure in all primitive history. The thought of God as an intellectual Being, independent of all material existence, was seized by him, and, so to speak, incorporated in the nation which he led. Not, of course, that the nation and the idea were simply coextensive. The idea of the most high God as he revealed himself on Horeb is one for all times and all nations—an idea of a pure and infinite Being, which admits of no national limitation, but which nevertheless inspires every decree of the legislator, every undertaking of the captain of the host.

The incessant jeopardy to which the political existence of the Jewish state was exposed occasioned the continuance by the prophets of the direction of the founder, and led them to supplement his ordinances by additional precepts of a humanitarian tendency of which they originally gave fewer evidences. How far the efforts of the prophets were availing is well known. It should be borne in mind, however, that the character of a people is to be judged by the ideals and standards which it has maintained, not by its occasional lapses.¹

¹ The account of the religious ideas of the Jews given in the original has been amplified by the insertion of some passages from Ranke's *Universal History*.—ED.

With the marked exception which we have noticed above, this entire Asiatic civilization, although it was inscribed and perpetuated on monuments, conferred no great benefit on humanity. It broke like a reed under the Macedonian power, willingly accepted a Greek color and Roman form, and found in Mohammedanism nourishment for further subsistence. But while Western Asia saw powerful thrones erected and overthrown, unwritten events were enacted in the northern and eastern portions of these empires which furnished material for a more beneficent civilization.

Alexander the Great, on reaching the boundary marked by the Jaxartes (Sihon), came upon a people whose warlike character constrained him to discontinue his course of victory, and on the farther side of the Indus he found equally insuperable checks to his progress. Although it must remain somewhat doubtful what people inhabited those regions in the fourth century B. C., still the historical Tomyris, queen of the Massagetæ, who opposed a limit to the sovereignty of the Persian Cyrus,¹ is a personage of such decided Germanic character as leaves no doubt in regard to the derivation of her people, which is further elucidated by other evidence. But what was then in quiet preparation beyond the Indus was not destined to appear in history until after the lapse of extended time. In this interval a civilization of an especially Aryan type was developed in Southern Asia.

¹ The accounts that have come down to us of the final enterprises and death of Cyrus are so obscure and so legendary in their nature that no conclusions on the point in question can be safely drawn from them.—ED.

VI. THE INDIANS.

THE people who exhibit the development last mentioned were, as we may conclude from their language, which was a product of their civilization, a branch of the great Aryan race, which in the Old Testament is called the Japhetic and is placed in opposition to the Semitic. One section of it, however, had pressed into India, carrying civilization as well as conquest; but it encountered in that country, naturally swarming with inhabitants, a more vigorous population than that which the Semites had succeeded in subduing in Africa and Western Asia. The conquest seemed consequently to have been less complete, and we can hardly resist the conclusion that the civilization thus introduced was subject in its further development to alien influences.

The Primitive History of the Indians, however, is involved in deep obscurity. Their literature has come down to us only after various transformations; even the Greeks and Romans possessed a very inaccurate knowledge of it. The legends indicate that after the subjugation and the dispossession of the original inhabitants the states established in the North passed through a period of severe strife between the dominating tribes, among whom the *Pandu* and *Kuru* are prominent.¹

As the most ancient social arrangement there appears the division into castes, which has continued to the present day, and which, as among the Egyptians, placed the priests and warriors at the head of the people, though the two systems resembled each other only in the similar historical conditions which formed their common basis.²

But it is characteristic of Indian history that as early as the sixth century B.C. it presented a religious and moral rather than a political aspect, and that in their efforts at reformation the people fought through intellectual conflicts scarcely equalled in intensity, and never surpassed in the magnitude of the field, by those of any other people. Since that time *Brahmanism* and *Buddhism* have occupied in Southern and Eastern Asia opposing positions like those of the Old and the New Church in the Occident in modern times, and what the earlier contest lacked in speculative value was almost made up by the energy with which it was fought out.

Form.—Nearchus, the general and companion of Alexander the Great in his expedition to India, and other Greek historians, make particular mention of the tall and slender forms of the Indians. In the ancient sculptures of India, which by no means contradict the statements of the historians, the people appear decidedly effeminate. This effeminacy was

¹ Our only knowledge on this point is derived from the *Vedas*, which make casual mention of five tribes or nations, and of the ascendancy obtained, after a great conflict, by the *Kuru* or *Puru*.—ED.

² See, on this point, *ante*, p. 121, note.—ED.

possibly induced by the climate, which in the course of time caused the people to differ as widely in their physical characteristics from the European nations of the same race as the latter diverged from the common type in the North and South, without losing its distinctive marks in reference to the surrounding foreign races.

Dress.—Under a sun as fervent as that of India an elaborate development of costume could scarcely be expected. The oldest native writings, as well as those of the Greeks, and also all the sculptures, agree in indicating that the original dress consisted of a loin-cloth, which was worn either like a sack or in the form of trousers, and reached to the feet when worn by the women; even to this day the lower-class Hindus wear such a dress. The higher classes added a light wrap, which consisted of a long piece of stuff and could be worn in various fashions. A turban covered the head, and shoes of white leather protected the feet. The poorer people contented themselves with sandals of plaited rushes or of bast. Cotton, which is indigenous to that country, and silk, which was imported, supplied the material for garments. The cotton goods were usually white, though they were sometimes dyed; for the silks the favorite color was red. Fine wool, and even the inner bark of trees, were also utilized; and fur seems to have been worn as an ornament.

Ornaments.—India being the true home of pearls and precious stones, these must necessarily have played a prominent part as ornaments. Individuals who did not possess such articles adorned themselves with gay ribbons and flowers. Their pictorial works as well as their writings show that the Indians were always lavish in display. All writers agree in the opinion that scarcely any other people valued physical beauty so highly or were so devoted to its maintenance. In the frequent use of baths, lavings, ointments, etc. they equalled their European relatives; but while these contented themselves with cold water and melted butter, odoriferous oils and fine extracts were at the disposal of the inhabitants of the torrid zone. But the southern magnificence of surrounding nature excited the imagination even in regard to matters of taste: like other Asiatics, the Indians painted themselves, dyed their eyebrows black, and stained with red the nails of their fingers and of their toes, and even their hands and feet. Both men and women wore the hair long and in artistic braids (*pl.* 19, *fig.* 17).

Jewelry.—Their jewelry consisted of costly girdles, bracelets (*figs.* 7-9), and anklets (*fig.* 10), rings on every finger and in the ears, and chains on the neck and bosom (*figs.* 11-16); and their head-dresses (*figs.* 1, 2, 6) were lofty and richly adorned. In the most ancient records there is mention of jewellers who also worked in ivory, tortoise-shell, coral, etc. (See Vol. I. p. 378.)

Caste Distinctions.—The Indian costume and ornaments were regulated by rank rather than by wealth, and the ancient law-book of Manu gave precise directions as to their use. Primarily, the sacred cord was the distinguishing mark of caste among the Aryan inhabitants. It con-

sisted for the *Brahmans* of three cotton threads; for the *Kshatriyas* or warriors, of three hempen threads; and for the *Vaisyas* (*Vaiçyas*) or artisans and tradesmen, of woollen threads. It was worn over the left and under the right shoulder, and was the symbol of initiation into the castes. The initiation ceremony is enjoined to take place some time between the eighth and the sixteenth year of age in the case of a Brahman, between the eleventh and the twenty-second year of a Kshatriya, and between the twelfth and the twenty-fourth year of a Vaisya.

The book of the laws also prescribed for the Brahmans a shirt of fine hemp, a belt made of sugar-cane, the skin of a gazelle, and a bamboo staff reaching to the top of the head. The soldiers were to wear a linen shirt, a belt of bow-strings, the skin of a deer, and a staff of bamboo reaching to the forehead. The dress of the third class was a woollen shirt, a hempen belt, a sheep-skin, and a staff of the unpeeled wood of the fig tree reaching to the point of the nose. However, it is related that in Ayodhya (Oude), a centre of ancient Indian civilization, no one was ever seen without costly garments; and there are also other indications that then, as well as later, regulations in dress were the less observed the more minutely they were prescribed.

The law made no regulation regarding the attire of the fourth caste, the *Sūdras*, who, however, in early times could be called a caste only in a negative sense.¹ They were divided into several classes, among whom were the *Pariahs*,² who were deemed unclean, and were consequently excluded from all communication with the more privileged castes. Other classes of the *Sūdras*, however, were permitted to enter the service of the higher castes.³ The severity of these regulations appears somewhat justifiable when we consider that the class which enjoyed no privileges, not even justice, comprised the subjugated population, who, consisting of black and copper-colored people in entire savagery, such as are yet found in the mountains of the country, had to be kept apart, that the purity of the superior race might be preserved. (See Vol. I. p. 380.)

Royal State.—There were in India various kingdoms whose sovereigns belonged to the warrior caste and whose positions were entirely Oriental. Less controlled by the priests than was the Egyptian king, the Indian monarch nevertheless enjoyed divine veneration. The inherently milder disposition of his race seems to have restrained him from the exercise of the cruel despotism so characteristic of the Western Asiatics. But in pomp and magnificence he far surpassed the latter. His garments con-

¹ The pure *Sūdras* are at present by no means relatively low in the social scale. Some great native princes, like the maharajah of Travancore, are of *Sūdra* family. In later times the actual number of castes became, as at present, very great. Even the Brahmans have many castes, some high, some low.—Ed.

² The *Pariahs* proper are in no sense true *Sūdras*. Neither do they exist in Aryan India. They are found in South India only, and are the Dravidian *drummer* caste (*parei*, a drum). Though very low in respect of rank, they are by no means the lowest of the *outcast* grades of Tamil society.—Ed.

³ At present there are many Brahmans engaged in secular employments. Many enter the military service. In parts of India there are even "plough Brahmans," or agriculturists who wear the Brahmanical thread, claiming and receiving recognition as members of the highest caste.—Ed.

sisted of yellow silk richly embroidered with gold and studded with precious stones and pearls. A numerous and magnificent court surrounded him; his wives served him at table and accompanied him even on public occasions. Whenever he appeared in the streets servants preceded him with vessels of incense. Borne in a richly-ornamented palanquin and followed by his body-guard, he moved in the midst of his gorgeous train as if in a festal procession.

India has, as is known, the best hunting-grounds in the world; the kings had private parks in which game was preserved expressly for them; but they also went on horseback or on elephants to more distant hunting-grounds, accompanied by the most noble of their soldiers and by a numerous retinue of servants. Not less pompous and magnificent were their religious ceremonies, especially the great "horse-sacrifice," at which the sovereigns always presided.

Dwellings.—It has been correctly remarked that when a house is chiefly used to furnish shade, less attention is paid to its construction than to its decoration. Notwithstanding the splendor of fabulous cities concerning which we read in old Indian fictions, we may presume that the people for a long period lived in airy tents and in huts of bamboo cane. Even later on they advanced no farther than to use wood and bricks as building material. The houses of the wealthier Indians, like the dwellings of Western Asia, consisted of a court surrounded by rooms lighted by the entrances; but they had widely projecting roofs resting on pillars and forming an open portico around the courtyard. In the ages of luxury several of these courtyards were connected and served for various purposes, such as an abode for the family, a garden, a poultry-yard, etc. Houses of more than one story consisted above of light balconies, verandas, etc.

The ancient law required the royal palace, which we may presume was of large dimensions and becomingly decorated, to be surrounded by walls if its natural site did not furnish sufficient protection. The numerous large cities of ancient India appear also to have been strongly fortified, suggesting the reverse of the happiness and splendor with which they are filled in poetical descriptions. (See Vol. I. p. 378.)

Public Works.—The internal organization of India, even in the earliest times, far surpassed that of its despotic rivals. The chief cities were connected by highroads, on the preservation of which great care was bestowed. Traces of their immense bridge-structures are visible to this day. Regions in which there was a scarcity of water were fertilized by canals, larger constructions of this kind being no doubt supplied with locks. Avenues of trees, wells, and houses of public entertainment were constructed for the comfort of travellers.

Trade Guilds.—It follows as a consequence of the union of all laborers into one caste that the Indians were acquainted with trade guilds,¹ and

¹ The Indian trade guilds have assumed the nature of castes, most of the trades or employments being to a great extent hereditary.—ED.

that it was the duty of the leaders of each guild to watch over the trade and to restrain the overreaching of individuals. The skill in the production of admirable works by means of extremely simple appliances which is still found among this people has undoubtedly been inherited from ancient times. But in a country where nature bestows its blessings with open hands, industries developed less from necessity than from the affluence of the higher classes, and consequently the skill of artisans was applied to fabricating articles of luxury rather than of utility. Hence we see exaggerated and even fantastical forms, not only in the Indian architecture, but also in the

Furniture and Utensils.—The common people were satisfied with a plaited mat, on which they rested, slept, and ate, a few copper vessels, and, if they had any possessions, a wooden chest. The king not only ate and drank from gold and silver vessels, but even washed and bathed in such. Some ancient earthen vessels (*pl.* 19, *figs.* 21–31) which are extant exhibit a peculiar style of ceramic art. Besides these but few evidences have been preserved of ancient life in a country which was seldom visited by Europeans, and which in the course of centuries was subject to the most violent commotions. The productions of its industry seem to have been entirely for domestic use, and its exports to have consisted chiefly of its costly raw materials. In ancient Rome the so-called “myrrhine vases” of India, made perhaps of a kind of porcelain,¹ were articles of luxury highly prized.

Literature.—The civilization of the Indians is especially manifested in their admirable literature, which they fostered and preserved during thousands of years, and in which they appear as a people of profound feeling, of fine perceptions, and of exuberant imagination. A more detailed consideration of it is outside our scope. (See Vol. I. pp. 380, 383.)

Religion.—But the religious system of the Indians, or rather its development, in which the plastic genius of the people is especially exhibited, requires a brief description. We distinguish in the course of this development three periods, each marked by important changes.

Vedic Period.—The first period was characterized by a tendency, common to the ages in which a childlike sentiment prevailed, to deify and personify the powers of nature. This period extended from about 2000 B. C., when under patriarchal government the Indians inhabited their aboriginal home on the Thibetan table-land, down to the time of their entry into the Punjab. The beneficent and inimical effects of the powers of nature divided, though in a harmless manner, the world of the gods into opposing classes. Placed in the midst of the struggle between these, the heroic combatant will find a blissful resting-place in the kingdoms of *Yama*. The rays of the sun, the clouds, the lightning, rain-storms, etc. furnished material for further deifications. The storm bore good or evil

¹ *Murra* (less correctly, *myrrha*) was formerly considered to have been a kind of stone, though supposed by some scholars to have been Chinese porcelain. F. Thiersch, however, has shown by conclusive arguments that it was fluor.—ED.

spirits through the air; gnomes inhabited the earth, and red-haired giants served the "winter god," *Vrita*. *Indra*, or the aqueous vapor that brings each autumn the welcome rain on which plenty or famine still depends, received the largest number of the Vedic hymns. By degrees, as the husbandmen realized more and more the importance of the periodical rains, he became the chief of their gods. *Agni*, who gave fire to men, ranked perhaps next to *Indra* in the number of hymns addressed to him as the "youngest of the gods," "the lord and giver of wealth." These two gods, *Indra* and *Agni*, belonged to the "kingdom of the sun." (See Vol. I. p. 381.) The prominence given to the cow in the oldest of their legends (which are closely related to the old German myths) shows the importance of that animal to the people.

Brahmanism.—To this artless system of religion, after various changes in locality and social circumstances, was added the doctrine of the priesthood, the *Brahmans*, with its speculative basis and peculiar social tendencies. As the original cause of being it proclaimed *Brahm* (frequently written *Brahma*), that is, "absolute Being itself," which by self-renunciation gained material existence, and this at first in the nature of a triad (*Trimurti*)—namely, *Brahma*, *Vishnu*, and *Siva*, the first representing the creative principle, the second the sustaining principle, and the third the destructive principle. To this first triad was added a second, feminine in its character. *Sarasvati* was associated with *Brahma*, *Lakshmi* with *Vishnu*, and *Bhavani* (*Parvati*) with *Siva*. The universe was an emanation from *Brahma*, proceeding by a long series of gradations, at one of which mankind appeared. The priests originated from the mouth of the god, the warriors from his arms, the third caste from his loins, and the fourth from his feet. Man's destiny on earth is, by strenuous efforts in the discharge of duty and by contemplation, to return to his divine origin. Whoever fails to accomplish that destiny must do penance and make atonement by transmigration through lower forms of animal life. A place of horrors, graded according to their crimes, was reserved for obdurate offenders, but the prayers and offerings of the faithful were efficacious to free the imprisoned souls. Thus in the domain of morals, as in that of speculative thought, an exuberant imagination devised conciliatory methods and ideas, and held captive the minds of the people.

It is significant that *Brahma* himself seems never to have had either a special service or a special temple. He was merely an abstraction, unintelligible to the people; but the *Brahmans* considered themselves his real incarnation. In pictorial representations he appears with four heads and four arms (*pl.* 20, *fig.* 2); *Sarasvati* is also represented with four heads, sometimes as a hind.

Siva, by his worshippers called *Mahadeva*, "the great god," is distinguished by a necklace of skulls. He is generally seated on a tiger-skin or rides upon a bull. He has a third eye in his forehead, and he appears also with five heads. From the crown of his head flows the sacred stream of the Ganges (*fig.* 3). As an independent deity he also exhibits benef-

icent qualities and gives new life to what has been destroyed. His spouse, Bhavani, participates in his double character, and appears sometimes as a fury and sometimes as an amiable and estimable goddess. The ceremonial service of both was replete with debauchery, most probably having been demoralized under Western Asiatic influence.¹

The conception of Vishnu underwent a more ethical development. He is called "the loving one;" he aids the good and battles against the evil. He is generally represented in simple human form, reclining on the body of the seven-headed world-snake *Ananta*, and thus traversing the ocean, while Lakshmi kneels before him and does him service. From his navel grows the lotus-flower on which Brahma is carried (*pl.* 20, *fig.* 1). Countless other deities besides those mentioned peopled the Indian Olympus; for instance, the "god of love," *Kama* (*fig.* 4), who rides on a parrot. Some of them are of somewhat late date, and disclose their recent origin by their grotesque appearance, as *Karupanasami* (*fig.* 5), or even by their modern attire, as *Beemun* (*fig.* 6).

The system underlying Indian mythology, according to which each individual deity is an expression of the one original Being, and at the same time has his separate and successive incarnations or avatars, combined with the policy of the Brahmans by which they retained for themselves in strict secrecy the knowledge of the sacred traditions, enabled each individual to form his god according to his own wants, or at least to choose one to his tastes. The influence of this creative activity extended itself even to other nations. Thus the Calmucks have *Aijushi* (*fig.* 14), the helping god in sickness, and other Mongolians have *Aijukal* (*fig.* 13), in place of Vishnu. The representations show at a glance the Indian origin of these deities. But the doctrines of the Brahmans, overwhelmed by the vagaries of fancy, degenerated among themselves into a coarse asceticism, the final outcome of which were the *Fakirs*; and among the people it lapsed into a debauched sentiment which finally led them to worship the images of their own parents placed under glass globes (*fig.* 8) or induced fanatics to cast themselves under the wheels of *Krishna's* chariot² (*pl.* 19, *fig.* 37).

Buddhism.—Among a people so naturally sensitive a reaction was inevitable; and this was induced about the fifth or sixth century B. C. by the son of the rajah Suddhōdana (Siddhārtha), who in after-years was more generally known by his family name of Gautama, and who became known as *Buddha*. It was likewise natural that one extreme should beget another, and that the founder of the new doctrine should cast aside

¹ It is the opinion of most late authors that Sivaism is a survival of the ante-Aryan or native Dravidian cult. But we are not obliged to have recourse to either hypothesis. In a country where the destructive agencies of nature—storms, floods, droughts, etc.—are more potent than elsewhere, the power thus displayed would obtain a prominent place in the mythology, while the wars and revolutions of a later period, with the general and long-continued misery they entailed, account for the ascendancy of the Siva worship and the grossness of its rites.—ED.

² That this practice ever existed to any extent is denied by Hunter (*Statistical Account of Puri*, p. 62). Hindu and Mohammedan literatures are alike silent respecting it.—ED.

not only the fantastical excrescences of the old cult, but its positive substance as well. Buddhism played the same part in India that rationalism has played among us, and attained in various philosophic systems to the same speculative domain—to that, in fact, which has been reached by modern materialistic speculation. But the people made a god of its founder (*pl.* 20, *fig.* 9), gave him a priesthood—which, like that of the Brahmans, occupied itself with mere forms—and, since they had no other gods for whom to build temples, erected temples over his relics (*pl.* 19, *fig.* 36), the story being that at his death they had divided his body and distributed its parts throughout the kingdom.

While Buddha traced the origin of all evil to existence itself, and placed the goal of all efforts as well as the pinnacle of bliss in dissolution of existence, the *Nirvāna*¹ or annihilation, his successors finally denied existence altogether. His priests, in remarkable parallel to the experiences of later times, introduced celibacy and established monasteries. In this form Buddhism spread over a great part of Asia, becoming continually ruder and more vulgar. It produced monsters yet more hideous than those of Brahmanism. The idol *Vajrapani* (*pl.* 20, *fig.* 10) even appears as the subjugator of evil spirits. (See Vol. I. p. 381.)

The religion of the laity was lost in meaningless customs, especially in the repetition of numberless prayers. Prayer-mills were invented, on the wheels of which pious formulas were inscribed (*fig.* 11), and the mechanical turning of the wheels was considered an equivalent for the actual recitation of the inscriptions. For the convenience of the public the mills were frequently placed on posts erected along the roads.² The idol-posts of the Tunguses (*fig.* 12), painted with the images of their idols, manifestly originated from this custom. Both Brahmanism and Buddhism also relapsed into animal worship (*fig.* 7). No foundation existed for a truly moral elevation of the people. Buddha himself declared against the system of castes, and in this respect was a genuine reformer; but as mere disapproval never effects real salvation, so the millennium during which his doctrine was supreme in India, and was even recognized by the kings, did not effect the cure of this fundamental evil of the national life. From India proper Buddhism has almost entirely disappeared, surviving there chiefly in the half-Brahmanized form called *Jainism*. (See INDIANS, Vol. I. pp. 376–383.)

¹ The apparently discrepant descriptions of Nirvana have led some scholars to the conclusion that it meant annihilation of the soul, and others that it meant its eternal existence in a state of bliss. Recent research in the Pali scriptures has disclosed three important passages which are decisive on this point. In two of these passages Śāriputta, the chief disciple of Gautama, and in the third Gautama himself, are represented as stating, in answer to a direct question what Nirvana is, that it is the destruction of passion, malice, and delusion (*rāga*, *dosa*, and *moha*). (T. W. Rhys Davids's *Hibbert Lectures*, 1881, p. 253.)—ED.

² This later and monstrous form of Buddhism prevails only in Thibet and the North. Ceylon and Indo-China preserve a comparatively pure type of Buddhism.—ED.

VII. THE GREEKS.

THE Greeks, to whom our attention is now turned, are, as is manifest from their language, likewise of Aryan origin, and are consequently related to the Indians. The largely varied results of their culture have been attributed to manifold causes without any satisfactory explanation having been really attained; for what we in the stricter sense term Greek civilization pertained only to a small portion of the people, and differences in race are insufficient to explain the immeasurable distance which separated Attic and Spartan culture, however much may be said of the opposite qualities of the Ionic and Doric characters.

The mobile inhabitants of Attica, whom their history represents as in ceaseless commotion, found it possible to display in all their creations their artistic tendencies in a manner that could scarcely be expected even in a calm and uninterrupted growth, while the Lacedæmonians, with all their sobriety of character, accomplished so little of positive value that we are tempted to doubt their real capabilities. The majority of the Greek tribes and states contributed scarcely anything noteworthy to the general culture, and yet when we ignore their boundaries their civilization appears as a universal power of imperishable influence. Whence comes it, we must ask, that the sense of form, which, whether ethical or æsthetic, is always based on that of proportion, became so specially developed in the Greek character, while among the Hindus every succeeding advance was eventually dissipated in excess?

Whoever on the wondrous shores of the Mediterranean has had his conceptions of life not merely enlarged, but intensified, by the impressions of surrounding nature can understand that in such a place and under such a sky a realm of beauty might indeed arise; but for the perfection of Greek creations no natural conditions will account. Nothing of all that awakens our astonishment on the Ægean Archipelago was accomplished in the immediate neighborhood under circumstances perhaps quite as favorable.¹

¹ The extraordinary intellectual capacity of the Greeks cannot, of course, be accounted for by their physical surroundings. It was an inherent gift, which it would be useless to attempt to trace to its origin. But its full and unique development may as surely be ascribed to these highly favorable conditions as the luxuriant growth of a plant to the richness or special adaptation of the soil. The difference in culture between certain branches of the Hellenic race is itself an evidence of this fact. Where the Doric and Ionic families occupied similar positions—as on the coast of Asia Minor, on the Gulf of Corinth, and in Southern Italy—their development was similar and not unequal. It is where the disparity in situation and circumstances was greatest that we find a corresponding contrast in mental vivacity and achievements. Athens, open to all the influences that could quicken the spirit of its people, foster individuality, and stimulate rivalry, reached the highest point in almost every department of art, epic and lyrical poetry being the chief exceptions. Sparta, shut up in the secluded valley of the Eurotas, and forced to maintain itself against a large subjugated population by an oligarchical rule and a military organization, deliberately renounced culture as enervating in its influence, and consequently dangerous to the existence of the state.—ED.

Origin and Civilization.—It may be considered certain that the ancestors of the Greeks came from the East, and it is very probable that they found the country already inhabited. Slavery existed among them, but there are few indications leading to the inference that it grew out of the subjugation of an inferior race. The narrow limits of the country must have precluded the possibility of a kingdom in the ancient sense of the word: petty states especially adapted to these limits took its place. But that not even the slightest attempt at creating a predominant priesthood was ever made would be another enigma, were it not in accord with the entire phenomena.

In view of the fact that on the peninsula extending parallel with Hellas another tribe of the same race developed a civilization no less important than that of the Greeks, and yet so entirely different, and that in an unfavorable northern clime yet other branches of the Indo-European race have accomplished results still greater than those attained by the Indians, the Greeks, and the Romans, we might perhaps favor the theory of a universal aptitude of the Aryan races, which we should look upon as a specific superiority were it not more manifestly the result of advantages enjoyed by this particular part of the human race, which was thus enabled to develop itself into a fuller, purer humanity.

In this view Greek life appears only as a natural outgrowth, for human nature is above all directed to the beautiful—a fact which we, in our lives full of labor and concern, can only with difficulty understand. The enjoyment of existence, the gladsome, unrestrained yielding to natural and unaffected being, precede the consciousness of care, and are in their nature æsthetic rather than ethical. Natural causes may assist or hinder spiritual effects, but they are never a sufficient explanation of them. If the course be free, there is needed but a slight historic direction for the achievement of positive results; innate impulse is the most important factor.

Grecian Art.—The real bloom of Greek civilization is Grecian art, poetic as well as its constructive art, both of which possess the merit of being perfect in their form. The study of this subject, however, falls within a province different from ours. (See Vols. III. and IV.) Moreover, in confining our attention to a consideration of the people themselves we must furthermore resign the privilege which history grants us of representing its great men; still, the duty of determining the basis of that wonderful development is as grateful as it is necessary.

Physical Characteristics.—Even in its physical characteristics the Hellenic race differs entirely from all peoples heretofore considered. Though the Egyptians, according to their ancient and uncertain traditions, considered the Greek sages who visited them as mere children, still the physiognomy of the former proves that they themselves occupied a far lower grade of human development. And although we admit that here, as everywhere, art exceeds reality, and that Greek sculpture can by no means be considered a standard of the physical structure of its creators, still the skulls that have been preserved from the classic period prove that their

owners must have been individuals of very normal characteristics. Their black eyes and dark hair prove that the prehistoric life of this people must have been passed in a southern clime. The men were of a brunette complexion—not brown, like the people of the Nile Valley, and still less like the later Hindus, but of such a shade as can be sufficiently explained by their scant attire and their fondness for the open air. The women, being less exposed, had the white skin of the Caucasian race.

Costume.—Plate 21 affords a survey of the development of Greek costume. We may indeed infer from descriptions as early as those of Homer that it was essentially the same in his day as at the conclusion of their history—namely, consisting of gown-like under-garments and a cloak-like wrap. We cannot, therefore, speak of an historical development of dress among the Greeks, such as we find among the more northern peoples. The only changes introduced were in the decoration of the various garments. A development occurred only in so far as in individual cases the customary dress was worn more or less complete. That the Greeks at one time wore merely skins may be inferred even from their later art-productions. But in their representations of contemporary society skins are no longer found, although it may be assumed that less progressive tribes—as, for example, the Arcadian shepherds—had worn them continuously, and did not adopt them anew.

In the times of early authentic history the better part of society was accustomed to wear garments of wool and linen; by means of commerce cotton also, and finally silk, were acquired and used. Strong contrasts of colors in the separate pieces of the dress were in use, but white remained continuously the choicest. Only moderate decoration of the edges of the garments with geometrical designs was indulged in by either sex. Besides embroidery, another kind of ornament consisted of designs beaten out of thin gold and stitched on the dress. Fully conscious of their physical advantages, they always held these advantages to be of greater importance, and all of them—the Doric Spartans even more than the Ionian Athenians—confined their clothing to the necessary protection of the body.

Nothing can be conceived simpler than the cut of the Greek garments. A square piece of material reaching from the neck to the knee, folded together lengthwise and supplied at the upper closed side with an opening for the arm, the open side being joined over the right shoulder and fastened with a brooch (*fibula*), girded about the waist, and perhaps sewed together under the arm,—such was the coat (*chiton*, *fig. 1*) of the men.

The same garment was customary among the women, but with this difference, that the piece in front (*hemidiploidion*) was much longer at the top, so that it might be turned down at the neck, and might hang over the bosom to the waist for greater warmth—an arrangement which was sometimes also repeated on the back. Underneath the chiton was worn a band of cloth (*tænia*) to support the breasts, and in addition to this a cord was sometimes crossed round the breasts outside the chiton to assist either in supporting them or in bringing out their form. The short chiton

of the men was likewise worn by the Spartan maidens (*pl.* 21, *fig.* 9), who were enthusiastic votaries of gymnastic exercise. The garment of the Athenian women reached down to the feet, and was either open on the side (*chiton schistos*, *fig.* 7) or closed all around (*fig.* 8).

Besides the *chiton*, the Greeks wore the *chlamys* (*fig.* 5), a mantle buttoned on the right shoulder and reaching to the knees, thus entirely covering the left arm and leaving the right arm and side unobstructed. It served particularly as the apparel of young people, and had the decided advantage of convenience.

The garment required for dignity and for ceremonious occasions was a mantle, the *himation* (*figs.* 3, 4), which, accordingly, was preferred by more elderly people. The noble Athenians wore it of fine Milesian wool, and took special care to drape it in artistic folds about the body. It was first thrown over the left shoulder, leaving a short end to hang down in front; the long end was then gathered round the back with the right hand, brought under the right arm, and across the body in front, and finally held in this position by being thrown over the left forearm (*fig.* 3). Or, instead of being passed under the right arm, it could be brought over the right shoulder, so as to envelop the right arm, then carried closely round the neck, and finally thrown over the left shoulder, with an end hanging down behind. In order to attain greater smoothness of effect they weighted the ends with bits of metal in such manner as to form tassel-like appendages. As it consisted merely of a large oblong piece, it could be fastened only by folding it about the body and holding it with the hands. Etiquette required the hands to be concealed under the garment, which was all the easier as this dress was not adapted for work. But one hand was necessarily uncovered in carrying a staff (*fig.* 3), etc.

The laborers wore the *exomis* (*fig.* 2), which consisted of a smaller piece of material loosely thrown about the figure in the manner just described, but girded and leaving the right arm uncovered. For a long time the latter garment was not adopted by the women; the double *chiton* (*fig.* 10) constituted for them the additional covering which was sometimes needed under the Grecian sky. Its peculiarity consisted in this, that, being much longer than the entire figure, it was not only turned down at the top, but was drawn up on both sides, and girded in such manner as to fall in full folds over the belt, thus forming a triple covering. Children often went about naked, or at the most were provided with a sort of little shirt or tunic (*fig.* 6), which was put on by inserting the head through an opening in the centre.

The Greeks endeavored to exclude Asiatic wealth and luxury; still, we learn from the comedies of Aristophanes that vanity greatly prevailed among them, and that even in times of greatest need the women were much concerned about their personal adornment. Thus, Greece too had its period of luxury in dress, though not during the palmy days of the republics. This luxury consisted partly in wearing the different garments at the same time; partly in the use of costly materials; and partly in

profuse adornment. Thus we see in Figure 19 (*pl.* 21) the chiton and chlamys worn together, and in Figure 15 the himation decorated with a broad border.

As might be expected, the women went farther in this direction than the men. The first object of their care was the fold (*hemidiploïdion*) which hung over the breast, and which was lengthened in front so as to be clasped in the belt. When the garment was also lengthened at the back, a second, shorter chiton was formed over the longer, a sort of over-dress above the under-garment (*fig.* 18), and sometimes, the shorter chiton being cut like a jacket (*fig.* 17), each was worn as a separate piece. The long pieces hanging on each side as well as at the front and back were cut in graceful curves, and these, together with the artistic folding, gave to the costume a very rich appearance. This kind of bodice was also worn as a separate piece, and the under-garment was drawn up so as to afford a covering for the upper arm, forming a kind of sleeve, which was fastened on the outside by a row of small clasps or buttons (*fig.* 19).

Two long garments instead of one were also worn, in which case the upper was shorter than the lower, and when possible was made of fine transparent material. True cloak-like upper-garments like the himation were worn by the Greek women of the later period, either small ones in the shape of a shawl (*ampechonion*, *fig.* 16), or long draped garments (*figs.* 11-13) exactly like the himation of the men.

Head-dress.—Much as the Greeks valued costume for setting off personal beauty—for they made the art of draping a formal branch of study—its use as a distinguishing mark of the different classes of society, such as we have noted in the despotisms heretofore considered, was scarcely known to them. Thus they lacked the head-covering which in Egypt and Asia constituted the mark of royal, priestly, and other dignities; this was used by them only when the actual need for it existed. If any protection were necessary, a wreath of leaves (*figs.* 14, 15) sufficed to shield the face from the burning rays of the sun. A simple ribbon wound about the head (*figs.* 2-4), the ends hanging down on the back of the neck, held the long hair in place. Persons engaged in labor that might endanger the head wore a plain pointed cap of wool, felt, or leather (*fig.* 1), which was sometimes strengthened with a rim (*pl.* 25, *fig.* 5). In hunting, travelling, etc. a hat was worn with a more or less broad rim (*fig.* 5). The shape of the head-covering depended entirely on the taste of the individual, and in all its simplicity showed great variations.

Women used the head-dress as an ornament, they, unlike the men, having no need for its protection. But the good old custom of gathering the hair on and about the head compelled them to wear a head-fillet or band, which was generally broadened into a diadem (*pl.* 21, *fig.* 7); and this, in order to serve its purpose more fully, was also supplied with other cap-like arrangements (*figs.* 17, 18). At night, or at any time when it was desirable to have the hair close about the head, it was put into a net and wound about with a kerchief (*pl.* 24, *fig.* 10), or a tasselled skull-cap

was worn. Married women wore a veil (*pl.* 24, *fig.* 8), with which the other head-decorations could be easily united.

The Greeks wore foot-covering likewise principally as a protection, yet in accordance with their sense of beauty they always wore it fitting closely. For the street and market a simple sole fastened to the foot with straps sufficed (*pl.* 21, *fig.* 5); the shoe (*pl.* 25, *fig.* 7), which was already known, afforded greater protection, and at times extended above the ankle like a boot (*fig.* 5). The foot-wear of the women was similar to that of the men, only more ornamented. The straps of their shoes were of purple-colored leather decorated with metal ornaments. In the course of time foreign styles influenced this article of dress also, and closed shoes were worn more frequently.

Jewelry, etc.—Among the Greeks only the women used jewelry; the Spartan laws forbade its use by men, and even the vain Athenians considered it unbecoming. Staff and ring alone were permitted, the latter serving as a seal, and therefore usually ornamented with a cut stone. Among the Spartans the ring was required to be of iron; among the other Greeks the nobles with the increase of luxury overloaded their fingers with gold rings, while they discarded the staff. Rings found acceptance among the women only at a later time; but there was no deficiency of other jewelry—bracelets and anklets, hair-pins, chains for the neck and bosom, ear-rings, brooches, girdles, etc. (*pl.* 22, *figs.* 3–16). The diadems (*figs.* 1, 2) mentioned above, either painted or made of gold and of various shapes, constituted at all times the principal articles of ornament.

Toilet Accessories.—As toilet articles they had small metal mirrors, combs made of bone or brass, and also fans and parasols (*fig.* 17). The cosmetic art, imported from Asia, passed from the *hetairæ* to other women, only at a later period, and never to such an extent as to disfigure. A more sensible means of beautifying the body, and one used daily by both men and women, consisted in bathing and in anointing both skin and hair. Both sexes bestowed great care upon the hair, which was worn long. In early times the men braided it and pinned it up into a coil on the top of the head; later, it was worn moderately short. The custom of wearing short curls and of shaving the beard was introduced under the Macedonian rule. The women were destitute neither of leisure nor invention, and before mannerism perverted them they displayed the greatest variety and the best of taste in the arrangement of their hair (*pl.* 24, *figs.* 9–11).

Dwellings.—The principal resorts of the free Greek citizens were the gymnasium, the market-place, the theatres, etc. The dwelling-house belonged rather to the wife than to the husband; consequently, but little attention was given to it; the Greeks were lodged as simply as they were dressed. Homer, who has given us the earliest description of the Greek dwelling, knew it only after it had reached a certain degree of development. When we trace it back to its original form, whence the latter was derived, we come upon the court surrounded by a wall and containing a hut.

The strong city-walls which have been preserved from the most ancient period prove that the Greeks well knew how to build fortifications, for which the hard stone so abundant in the country supplied the necessary material. It seems, as may be inferred from Homer, that for greater protection they erected wooden fences on the top of the low stone walls. The folding gate in the wall about the court of Odysseus, the strength of which the poet praises, pertained to the protection rather than to the beauty of the building. The hut of Eumaios, which he describes, and in which we may perhaps recognize an image of the most ancient Greek habitation, consisted of but one apartment: it contained a fireplace, serving at the same time as an altar, sleeping-places for the shepherd and his servants, and so much additional room that the guest could be accommodated with a bed of branches and hides.

Palace of Odysseus.—Of greater importance is what we are told of the palace of Odysseus, king of Ithaca, as its arrangement (*pl.* 23, *fig.* 1) certainly illustrated the plan of the more elegant habitations of that period, as well as of the one immediately following. The gate opened upon an outer yard, wherein the rubbish of the house and the manure of the neighboring stalls were heaped. The dog-kennel was beside the entrance. Exactly opposite, between the stables and the servants' apartments, an entry, closed by double doors, led to a square paved court. This was surrounded by a covered portico, on which the rooms on both sides opened. In the centre of the court was the altar of Zeus, guardian of the hearth. The apartment at the extreme left leading into the outer yard (designated by a circle) is supposed to have contained the kitchen. Under the portico, to the right, next to the stables, was the place for the wagons, and on the opposite side were the guest-chambers. The rooms opening on the court served various purposes; one was the bedroom of Telemachus, the king's son.

During the day the men occupied the large, pillared hall, which was connected with the front building by an entry having on its right a bathroom, and on the left, by the side of a third apartment, a narrow passage leading to a side yard. The grand hall had a pavement of cement, and its walls were nicely smoothed and decorated with various brazen ornaments. Movable seats and small tables for the individual guests were arranged throughout the hall, for the Greeks at that period took their meals in a different manner from what was customary at a later date.

The hall also contained a fireplace, but its position can no longer be distinctly defined; however, the smoke escaped through an opening in the middle of the ceiling which at the same time served for the admission of light. The timber of the roof was blackened by the smoke. Back of the men's hall was a smaller one for the queen, surrounded by store-rooms and by the apartments of the female servants. Stepping into the side yard, we see the apartment in which the skilful king constructed with his own hands his marriage-bed against the trunk of an olive tree. A kind of second story with an arrangement of rooms was added to the

rear part of the house; in these the distressed Penelope sought refuge from her suitors, and there Odysseus kept his secret store of weapons.

In our illustration (*pl.* 23, *fig.* 2) we have endeavored to present a diagrammatic sketch of the ground-plan of an ancient Greek palace in accordance with incidental statements in the *Odyssey*. That it was not, in reality, precisely as we have sketched it is shown by the excavated remains, which are supposed to be those of the royal castle at Ithaca, though only the enclosing walls and the foundation of a strong tower can be distinctly recognized. What Homer describes, in fact, is the country-seat of an opulent chief of his day.

City Houses.—The houses had necessarily to be constructed differently when they were built inside the city-walls. The outer yard disappeared; from the street one passed through a narrow passage into the court, or *peristyle*, which still, according to ancient custom, had the altar in its centre and the chambers ranged along the sides. They opened into it and also communicated with one another.

In larger buildings a second more spacious passage led into another court (*fig.* 3), which in its turn was surrounded by the apartments for the women. Covered porticos surrounded one or both of these open spaces. The principal changes related to the distribution and use of the inner apartments, among which in later times we meet picture-galleries, libraries, reception-rooms, etc. On one side of the second passage we generally find the spacious *triclinium*, or banquet-hall, while on the opposite side the stairs led into the upper story, which was generally erected above this middle wing. Beside the main entrance were rooms for the door-keepers and guards, and perhaps also stalls. The apartments of the men and of the women, the *andronitis* and the *gynæconitis*, were more strictly separated than even during the patriarchal age.

The ancient wall around the court became the proper wall of the town-residence, and was but little altered in its external appearance, for the Greeks knew little more of the use of windows than did the Asiatics. Their dwellings were closed toward the outside, as were those of the latter. Long rows of such walls of different heights, broken only by low doors and here and there by lofty barred peepholes, lined the narrow, irregular streets of the cities. The temples and market-houses and other public buildings alone afforded a pleasant sight to the eye. Here Grecian architecture unfolded its whole pomp and splendor. The sight of the Acropolis from the sea is said to have been an overpowering one. Still, Demosthenes found occasion to reproach his wealthy fellow-citizens because their houses rivalled the state buildings.

Country-Houses.—The Greek country-houses always retained something of their roomy comfort. Remains of some of them, which have been preserved in certain places of Central Syria, enable us to reconstruct the original building. They belong, however, to the period after the birth of Christ. Plate 23 presents their ground-plans, which can be accurately determined, and also an attempt to exhibit their former exte-

rior appearance. The plan of a part of the present El-Barah (*fig. 9*) confirms what has been said, and besides shows how long the original arrangements remained unchanged. It presents the dwellings of a small provincial city enclosed by walls, with only a door leading from the narrow street into the court, which extended to the front of the house. A portico, as shown in elevation on our Plate (*fig. 4*), formed the entrance of each habitation; the side-buildings were rarely found without such porticos. The dark lines indicate the streets.

House-furnishing.—The interior arrangement of the house was originally as simple as the building itself. We know how primitive were the couches made of skins and blankets as described in the *Odyssey*. This simplicity was established by law in Sparta, and the skilful mechanics among its subjugated neighbors had to work principally for the export trade. Elsewhere, and especially in the Greek colonies of Asia Minor, the influence of the effeminate despotisms by which they were surrounded led to the adoption of some customs tending to greater domestic comfort; this tendency became so widespread as to attract numerous artisans from Eastern countries to commercial Athens and to voluptuous Corinth.

In the palace of Odysseus each guest sat on a wooden stool before a separate small table. Subsequently, the people reclined on comfortable cushions along a single table, and costly couches became a part of the furniture of every wealthy house. But this Asiatic influence was merely an incentive. The superior mind and fine taste of the Greeks shaped and improved whatever was introduced. The thorough accomplishment of the task imposed on them by their very nature—namely, the transmutation of all their ordinary surroundings into objects of æsthetic form and shape, thus removing them from the sphere of mere utility to that of æsthetic impressions—constituted a characteristic which no other nation possessed in the same degree, and which indeed was the point about which their culture centred.

Ceramic Art.—The treatment of Greek utensils is very properly included in the history of ancient art, but it also belongs to the history of civilization, for, after all purely historical and technical questions have been answered, we still ask, What natural talent, what bent of mind, could have originated such artistic skill, such fine feeling, and such a cultivated sense of beauty? And how were they so unrestrainedly exercised in a domain where vulgar comfort and easy acquiescence in traditions usually hold sway? In an attempt to reveal that underlying spirit, which shows itself perhaps more delicately and more variously in the smaller products than in the great monuments of Greek art, our study, even while holding fast to historical facts, would be able to go beyond the limits of a history of art could it find words to express precisely the secrets that lie concealed in the very lines of those productions.

Plate 22 shows the general character of those articles which added to the comfort and adornment of Greek domestic life. It would lead us too far to describe each in detail; a few words of description must suffice.

The first glance shows what a prominent place the fabrication of vessels, both useful and ornamental, occupied in the industry of this people. The art had come down to them from ancient times; nevertheless, we perceive in the productions of the earlier period (*pl.* 22, *figs.* 61–65) evidences of Oriental influence. Such characteristics are seen, aside from their technical construction, in their more rounded form and their dwarfish shape.

Among their ornamentations we meet with the peculiar kind of foliated decorations and animal figures which are already known to us from the art of Central Asia, and which in Greece, having lost their symbolical meaning, assume an entirely fantastic expression. In Hellas proper and in the Italian colonies these forms appear as transitory only side by side with the original native ceramic art, which, in so far as it did not venture into the domain of luxury, retained its peculiar character unimpaired; but in the Greek-Asiatic countries they continued in vogue for more than a thousand years longer and survived the most terrible vicissitudes. The color of these articles is generally a faint yellow; the decorations consist of designs engraved upon the surface.

We again step on truly national soil when the low forms begin gracefully to increase in height, when animal give place to human figures (*fig.* 67), and when the hero-worship, through which the nation had attained to maturity, was introduced by means of these vessels into everyday life. Figures and ornaments are as yet black (*fig.* 66), no longer engraved, but accurately outlined. The material is most carefully treated. The gracefulness of this period rose to the highest elegance during the palmy days of Greece, and finally led to those magnificent productions which seemed to the Greeks themselves not unworthy to serve as the prize of victory in their national games, and which to us are unapproachable models of technical skill.

In the preceding periods a symmetrical whole had been attained by the skilful accommodation of the parts, the base, body, neck, and handle, to their respective purposes; but now, independent of all ideas of utility, the vessels acquired their perfect æsthetic effect. This merit belongs to the simplest as well as to the most elaborate articles, and they form an unsurpassed collection, the components of which can be graded only according to the time of their production, and not according to excellence of workmanship.

With such evidences of his artistic powers man might indeed dare to put himself in place of the gods as a subject for delineation. Henceforth the Greeks preferred to represent scenes from domestic or social life, and the vases of this period, from whose delineations the subjects of our Plates (23–26) are chiefly derived, exhibit the most private relations of life with that ennobling self-consciousness and that inspiration of the ideal which, if we had no other evidence than these vessels, would carry an assurance of the loftiest conceptions of existence. The decorations of this period, both figures and ornamental designs, are of a soft brown color with a black background. It was characteristic of the most refined Hellenic culture that, regardless of material, it could be contented with perfection of form.

As culture degenerated with the decay of the state (which in one sense, indeed, was itself purely an expression of the same culture), that contentment also ceased, and costly materials, especially precious metals, began to be employed for the purposes of fine art. Grecian handicraft, of course technically perfect in its best days, exhibited a wonderful degree of excellence to a very late period, and supplied even barbarous countries out of the abundance of its productions. Figure 71 (*pl.* 22) represents a golden vase which was found some years ago in Southern Russia in the tomb of a Scythian king, and which may be assumed with certainty to have been originally made for the trade of that region, since scenes from the equestrian life of the people are delineated upon it.

This department of art offers the first example of that decay of taste which soon invaded every other province. Far-fetched allusions took the place of true æsthetic sentiments; the fantastic banished the beautiful, still, however, leaving the outer charm of style and the air of the ideal. The drinking-vessels shown in Figures 49-55 illustrate the earliest, and indeed least objectionable, forms of this corruption of taste.

Furniture.—The change from extreme simplicity in furniture (see p. 183) to Asiatic luxury was very rapid, but it was confined to persons whose means permitted them to indulge in the desire for exotic articles of comfort and splendor. Inasmuch as Lycurgus permitted the Spartan boys to sleep on beds of hay or straw up to the age of fifteen, but required them after that age to use reeds or canes for their beds, and inasmuch as he forbade the men at their meals the use of cushioned couches, upon which the rest of the Greeks reclined, but instead permitted only wooden benches, it is to be inferred that such was the manner of life to which they had previously been accustomed; for a people may be prevented from enlarging its demands, but it will not submit to any essential diminution of them.

The household furniture mentioned by Homer was still very simple. The kings indeed occupied comfortable easy-chairs near the hearth, enjoying its warmth and light, and we may assume that the "thronos" was already at that time one of the royal privileges, actually if not legally. Later on, mention is made of seats, tables, and couches made of costly wood or precious metal, inlaid with gold, silver, or ivory, and covered with deer-skins or panther-skins brought from the Orient. The forms of these various articles (*figs.* 25-34), rather than their decorations, show that the Greeks imitated Asiatic models in the furnishing of their dwellings.

But it is characteristic of their culture that, in marked contrast with the smaller kingdoms of the East, which to a slavish degree imitated the great ones in ornamentation and luxury, the Greeks never exceeded a just limit; on the contrary, in course of time they returned rather to their noble simplicity, as is abundantly evident from the paintings on their vases. Figures 35-41 show specimens of precious as well as of simple household articles.

Family and Social Life.—In the same degree that the life of man is conditioned by his surroundings is it dependent upon them; hence the

life of the Greek was as simple as the arrangement of his house and as that of the state itself; but it has the greater intrinsic worth because he endeavored to find the value of life within himself and not in his possessions. The contrast between the two principal states of Greece was especially pronounced in this respect. But we shall not dwell upon it, because the Spartan idea of man and his surroundings is of value to the history of civilization only from the fact of its existence, and not from its influence. The constitution of Lycurgus, enjoining as it did the strictest discipline, kept exclusively in view the preservation of the Spartan state, without assigning to it a wider sphere of usefulness; and it did little to benefit even those who lived under it.

With the removal of the swaddling-clothes which were denied the newborn Spartan babe after its first bath there was for ever banished all that warmth of soul which makes existence endurable to its possessor and a blessing to his fellows. Experiments have been frequently attempted in the case of entire nations, but they have always failed. Athens glowed with a life which it continued to enjoy and diffuse long after it had ceased to be a state, while Sparta was never able to do more than impose formulas. In the other parts of Greece the infant was subjected to milder customs. Upon the judgment and means of its parents especially depended the education of the child, which up to the seventh year of its life devolved exclusively upon the mother: whatever the latter did not take upon herself she left to the benignant divinities, to whom the child was dedicated with a few simple ceremonies, while at the same time she hoped to avert evil influences by means of amulets. Cradles were unknown. The babe was placed in a receptacle which allowed it an easy, half-recumbent posture, or it was carried about in a sort of basket, though of course it was generally in the arms of its mother or nurse. At some time between the fifth and the tenth year the girls were consecrated to *Artemis*, and on that occasion they assumed a saffron-colored dress. Thenceforward their education was conducted in the house. It was of a domestic, but not cloistral, character.

Education.—Ancient education was somewhat like that of the more civilized nations of the present day—strict and at the same time invigorating. Ancient representations show us how disobedient children were punished with the rod or the sole. Games and toys were numerous; these are referred to by contemporary writers as well as portrayed in artistic delineations. Even Sparta permitted such games, and it is said that the rattle was invented there. Girls had dolls even with movable limbs, and boys had horses, dogs, geese, etc. made of clay: many such have been found in the ancient tombs of children. They had already nursery rhymes, songs imitative of those of birds and insects, balls, tops, hoops, etc. Our illustration (*pl.* 24, *fig.* 1), copied from an Athenian vase, shows a boy drawing a little wagon and offering a cake to a dog.

The favorite games were played with dice, which served the purpose of our marbles. The young people played social games like blindman's buff, play of words, riddles, etc., and they also associated at "love-trysts."

Plate 26 (*fig. 5*), copied from a vase in the museum of Munich, exhibits the game of morra, which is still very popular in Southern Europe. It is played by two persons, who sometimes, as in our illustration, hold a short staff; each rapidly holds up a number of fingers, which the other must at once guess. Figure 7, from a similar original in Berlin, shows a swing, a form of recreation especially adapted to the secluded life of the girls.

In the better families the boys on completing their sixth year were entrusted to a tutor (*pl. 24, fig. 6*), generally a worthy slave somewhat advanced in years, who instructed them also in the ordinary rules of etiquette. According to the Greek idea of education, body and mind must advance together; and although we have to seek in this combination the cause of that completeness of culture which stamps them for all time as models of human excellence, it must not be forgotten that the Greeks never departed from that happy mean which made their system of education what it was. Their plan of physical training was entirely unlike the exaggerated methods of the modern gymnasium, and their school-training aimed above all things to preserve in man his individuality—to make him an end in himself, instead of degrading him to the lower purpose of a means, as is the case so largely with us, who indeed, living upon a more unfruitful soil and under a less friendly sky, are compelled to struggle for existence by highly artificial methods which leave us nothing more than the abstract satisfaction of self-consciousness. The Greeks endeavored to acquire, besides the necessary strength, a fine carriage of body, and found in the natural exercises of running, jumping, wrestling, and throwing, systematically practised, the appropriate means to that end.

The young Greeks sought their pleasures in the gymnastic exercises of the *palæstra*, in the baths or public porticos, and especially in banquets, the expenses of which were either divided among the participants or paid by the host. These banquets generally had all the solemnity of festivals: the guests were anointed and crowned with wreaths; their joyous humor was allowed freer play because its very nature was a pledge that it would not descend to vulgarity: and a moderate indulgence in intellectual subjects gave additional zest to such meetings. The older citizens occupied themselves with public offices and cares of state.

Knowledge was imparted in private schools, for the state concerned itself only about the morals, and not about the acquirements, of the teacher. Grammar, a term that included reading, writing, arithmetic, music, and, later on, drawing, was the foundation of education. The first school-aids were a tablet covered with a thin layer of wax and a pencil of metal or ivory sharpened at one end for engraving and flattened at the other for erasing. Such writing-tablets were used largely for the ordinary purposes of life, together with paper made of the papyrus plant. The pupil sat on a low stool and rested the tablet on his knee when writing or reading, as shown in Figure 5, from a painted vase in the Berlin Museum. When he became sufficiently advanced he was made acquainted with the great poems of his people, and Homer especially was imprinted

on his mind, indeed became a part of his being. The youth completed his school-days between his sixteenth and eighteenth years. He was then invested with the chlamys, and his hair was cut short in honor of his guardian deity. At twenty he assumed the duties and received the rights of a citizen, and he was at liberty, until he established his own house, either to pursue his pleasures or to improve himself further by travelling. In the latter event, he availed himself of the hospitality of his father's friends (*pl.* 24, *fig.* 7) or of that of the new ones formed by himself.

Music was universally cultivated by both sexes. But the music of to-day, appreciable as it is to so large an extent by connoisseurs alone, would have found little favor with Greek critics, judging from that of their day, which was of a simple character, capable of being easily understood by every one, and directed as much toward ethical culture as toward æsthetical pleasure.¹

Musical Instruments.—Besides others, the Greeks were acquainted with wind and stringed instruments (*pl.* 22, *figs.* 21–24), but not with the use of the bow. Among the stringed instruments were the harp, the cithern, and the lyre. The harp resembled that of Egypt; the lyre was originally made of a tortoise-shell pierced with goats' horns, and retained its old shape when made of wood; the cithern had not only a hollow sounding-box, but also hollow arms, and was made of wood, ivory, or metal. The shapes of all these instruments were so diverse as to give rise to distinct varieties, each of which had a distinct name.

The wind instruments included flutes and a form of clarionet and trumpets. Among the varieties of flutes, the most important were the Pandean pipe with from seven to nine reeds, and the cross flute. The *aulos* (*pl.* 22, *fig.* 22; *pl.* 26, *fig.* 4) resembled our clarionet, and was either single or double. It was sometimes played with a leather bandage over the lips (*pl.* 26, *fig.* 8), to which a metal mouth-piece was attached in regulating the tone while the player was taking breath. Other forms of wind instruments, considerably increased in circumference at the bottom and surmounted by a cup-like mouthpiece, may be termed trumpets. The Greeks were also acquainted with the bagpipe, the cymbals (*fig.* 3), the tambourine (*pl.* 22, *fig.* 20), the castanet, etc. Ctesibus invented an hydraulic organ, which was further developed in after-times.

Marriage was not entered into hastily. It was considered largely a matter of public interest, which immediately concerned the state, and only the offspring of a freeborn citizen wedded to a woman of equal birth were held legitimate. In the age of Homer the groom still secured the bride by the presentation of rich gifts to her parents; but in later times the dower of the bride was a matter of importance. It is probable that the daughters of poor but worthy citizens were dowered by the state, in order that they might find husbands.

¹ Music was prized among the Greeks chiefly for its rhythmical effects and its animating influence. The lyre, which was the most esteemed instrument for social purposes, was used only to accompany songs and recitations.—ED.

Offerings to the guardian deities of matrimony initiated the wedding-day. In Athens both bride and groom bathed in water from the sacred springs of Callirrhoë. The marriage-banquet was spread in the house of the bride's parents, and women, who were excluded from other entertainments, were permitted to be present. At its conclusion the groom conducted his bride in a chariot to his own home, which was profusely decorated with garlands. A relative accompanied the bride in the chariot as an escort, and the mother followed carrying torches lighted at her own hearth; friends singing the marriage-song (*hymenæus*) and playing flutes accompanied the happy couple in stately procession, and all who met them offered congratulations. The mother of the groom received them with torches at the threshold of his house (*pl.* 24, *fig.* 8), and conducted them to the bridal chamber. The epithalamium was then sung by the invited guests, and on the following day friends brought presents and congratulations to the happy pair.

Domestic Life.—Monotonous enough was the life of a married woman. She had, in fact, simply exchanged the gynæconitis of one house for that of another. The only difference was that now, being the mistress, she commanded, while formerly, being the daughter, she had served. The husband belonged first of all to the state, and family life in the good modern sense was still unknown. Even in Attica, the most dissolute of the Greek states, the virtue of honorable women was appreciated; custom and law protected them from all insult. And yet the Greek woman was by no means kept in confinement like her sister in the East. In Sparta the girls even took part in the gymnastic exercises, and generally both girls and matrons appeared in public on festive occasions. Among themselves they had much social intercourse, and at one time the emancipation of woman was discussed as much as it is among us. Their duty consisted in the care of the household and of the children; dress constituted their entertainment, and music their chief recreation. Obedient female servants, whose life was as secluded as that of their mistresses, assisted them in the domestic work. There was, however, a special class of women who enjoyed greater liberty at the price of reputation. They were for the most part foreigners, who made a livelihood as dancers, flute-players, jugglers (*pl.* 26, *figs.* 3, 4), and hetairæ, though sometimes also by honest work.

But we must not regard the relations between husband and wife as cold and heartless. How could the *Odyssey* have taken root among a people with whom this was universally the case? Numerous representations (*fig.* 6) show us that married life was affectionate, especially from the time when intellectual culture became more accessible to women.

Funeral Ceremonies.—The closeness of the family tie among the Greeks can best be seen in their sorrow for the dead. The burial ceremonies were briefly as follows: An *obolus* was placed in the mouth of the deceased to pay the fare of the ferryman Charon. (See Vol. I. p. 160.) The body (*pl.* 24, *fig.* 12) was washed, anointed, wrapped in linen cloths, crowned with a wreath, and laid in state. Burial-gifts were laid upon the

bier or placed in the grave, which was frequently a stone vault. The law regulated the length of time during which the body was to be kept unburied, and it also prohibited excessive mourning in public.

The funeral procession was led by female flute-players or by hired singers who chanted mourning songs. The male mourners, wearing black or gray garments and with their hair shorn, preceded the bier; the women followed. After the interment a funeral meal was spread in the house of the deceased. Three days later the first offering was made at the grave; the second was made on the ninth day; and the third, on the thirtieth day, concluded the time of mourning. The tomb was regarded as a family sanctuary, and was decorated from time to time with wreaths. In Sparta the place of burial was in the city itself; in other parts of Greece its site was a matter of choice. It was generally located immediately outside the city-gates, and there the tombstones stretched in long rows. Soldiers who were killed in battle were buried at the public expense.

Besides the free citizens, who were the real rulers, the Greek states, especially the populous cities, included a number of wards who did not enjoy full civic privileges. These were in Athens the *metoikoi* (those "dwelling with" the citizens), and in Sparta the *perioikoi* ("dwellers around"), and the *helots*, the degrees of dependence being various.¹ In addition to these there were also slaves, who were obtained by inheritance or by purchase. Commerce and trades were mostly in the hands of the wards, though in Athens neither law nor custom prevented the citizens from following either.

Industrial Arts.—It would lead us too far to specify in full the details respecting agriculture and commerce and the technique of each individual industry. The illustrations on Plate 25, copied from ancient pictures, show sufficiently well the primitive condition of the trades; on the other hand, extant productions indicate the high development of the arts. The artisan classes were occupied in making a living, and they did not participate in the intellectual culture of the nation until at a late period, when they were called upon to supply the markets of the entire Roman world, and when, consequently, it depended upon them, as well as upon the poets and learned men, to maintain the sound traditions of their country. Thus it came about that at the beginning of the Christian era the class of artisans was remarkably cultivated, and formed the most fruitful field for the spread of Christianity.

Priesthood.—As already stated (p. 176), Greece possessed no such priesthood as existed in the countries we have before described. In case of need, and indeed always to a certain extent, each individual was his own priest, and the master of the house was the priest of the family. There was no orthodox creed to be taught or preserved; only the ancient tra-

¹ The *meteci* at Athens were aliens by birth or descent, and were generally traders, artificers, sailors, etc. In Lacedæmonia the Spartans were the alien conquerors, while the original inhabitants were divided into two classes—those who tilled the more fertile land as serfs (the *helots*), and those who paid tribute for the privilege of retaining and cultivating the poorer and remote tracts.—ED.

ditional gods were to be venerated. The state allowed each man to have his own conception of them. There were indeed established priests and priestesses (*pl.* 26, *fig.* 1), who represented the state and people as a whole, but they had no special privileges, nor even a special consecration; they were merely officials and temple-servants. The Greek recognized no mediator between himself and his gods. He himself supplicated them for benefits, sought to avert their wrath, and poured out to them his expressions of gratitude.

Offerings made the prayers more potent; only where the gifts were brought as a sin-offering did the entire ceremony take upon itself a deeper ethical meaning; nevertheless, not even in such a case was another supposed to take the place of the petitioner. Sacrifice was always preceded by a purification or washing of the body, which typified the cleansing of the inner man. A cleansing power was also attributed to fire; therefore torches were borne by the priests and supplicants (*fig.* 2). Some plants also, especially the laurel, were accredited with a similar power, and consequently wreaths were worn. The purificatory bath was followed by a prayer uttered in a standing posture. When the prayer was addressed to the Olympian gods, the hands were uplifted; if to the divinities of the sea, they were outstretched; if to the subterranean gods, they were turned downward. Persons who implored protection knelt and embraced the knees of the statue of the god.

Offerings consisted either of gifts to the temple or of sacrifices, bloodless or sanguinary. Figure 2 represents an example of the former. The latter, as in the case of hecatombs, consisted at times of entire herds. The victims were required to be free from blemish and never to have borne the yoke of man's service. A part of the flesh only was given to the flames; the remainder was consumed by the participants in the ceremony, who were crowned with garlands as a sign of their consecration.

Besides the above-described method of appealing to the gods, there was the proper service in honor of them, which was almost always practised by larger numbers, especially as a thanksgiving for any happy occurrence that had befallen the state or some considerable community. Splendid processions, like that of the Panathenæa which Phidias has immortalized on the Parthenon, were the usual form of expressing the feelings thus awakened. Athletic contests, chariot- and horse-races, and gymnastic and musical exercises were also employed for the same purpose, as indeed many institutions were transplanted by the Greeks into the domain of religion which serve us for pleasure or utility only. Chief among these was the theatre.

Drama.—The Greek drama seems to have been developed out of two distinct elements. One of these relates to the famous car of Thespis, to trace the remote origin of which would lead us beyond the limits of the present task. The other consisted of those festive choric dances which generally formed a part of religious worship, especially that of Dionysus. Just as games of rivalry in general were enthusiastically employed by the

Greeks in their religious services, so they appeared with their acute intelligence early to have discovered what important material for that purpose lay in the ancient mimic amusements of the people; nor were men of talent lacking who knew how to combine these with the choric dances in a symmetrical whole. Greek drama long retained the character of a contest, for several pieces, as is well known, were wont to be performed in succession in competition for prizes.

Theatre.—The construction of the theatre was as simple as it was appropriate. A suitable plot of ground at the foot of a hillock was selected. The seats for the spectators were built upon a slope naturally concave, or rendered so by art, in a semicircle of considerable diameter. In front was the orchestra, originally the place for the presentation of the choric dances, with an altar in the centre. The stage developed itself out of the wall which was at first erected back of the orchestra in order to throw the sound toward the audience. It consisted of an elevated framework, usually ornamented in front with pillars and statues, and afforded an open space for the performance, with a projection at each end for the use of the chorus when it took a direct part in the action. At other times the chorus remained in the orchestra below and in front of the stage, the approach to the latter being by two flights of steps. Just behind the stage were situated the dressing-rooms, the anterior walls of which, properly decorated, served the purpose of scenery, and from which the actors stepped upon the stage. Ghosts, spirits, divinities of the nether world and of the sea, ascended from the hollow space beneath the stage. The only roof was the bright sky. However, the theatre was not wholly without side-scenes, as we understand the term. Erect prisms stood at each side of the stage, the three sides of which, painted differently, furnished the needed change of scenery. The actors wore masks (*pl.* 22, *figs.* 77, 78) and, to elevate their stature, the *cothurnus* or buskin. The author (*pl.* 26, *fig.* 8) superintended the preparation of the performance.

Festivals.—The arrangements for the other public spectacles were similar: the most famous of these were the renowned Olympic Games, which were celebrated every four years, and by which the Greeks reckoned their chronology. The horse- and chariot-races were performed in the hippodrome; the foot-races, boxing, and wrestling, in the stadium. Both were large oblong spaces rounded off at one end and surrounded by tiers of raised seats. In the hippodrome the starting-place for the horses was at one of the narrow sides, and at the other stood a post which served as the goal around which they had to pass in the race. Plate 25 (*fig.* 8) shows one of the vehicles used on such occasions.

These festivals, at the principal of which representatives of the different Greek nationalities from the remotest regions assembled, attained, together with Hellenic culture, the most widespread diffusion, and belong to the most striking phenomena presented in the history of human development, not only from their external form, but also because of their intrinsic objects. We find in them the true characteristic of the Aryan

race—namely, the appreciation of individuality. Nowhere previously had this been valued to the same extent; and though the Greeks did not comprehend this principle as fully as other peoples of the same race have since done, yet their appreciation of it was so marked that without duly considering it we cannot understand the significance of Greek life or its later influence. As insignificant as the prize of victory was, a wreath, a vase, a tripod, etc., so great was the honor, and the mention of it was even deemed worthy a place in history.

In the highest degree a passionate lover of every kind of exhibition of strength, even in so trivial a thing as a cockfight, the Greek always considered the most positive element in such exhibition, whatever the particular example; that is to say, he valued the victor rather than the victory. This feeling gave a most decided direction to human culture, and enabled it when in danger of error to recover the right path. The same spirit, leading him to spend his leisure hours in the gymnasium looking on or taking part in the exercises, caused him to admire the fresh glowing beauty of the youth of his native city. Even in the market-place, which was the political rendezvous and mercantile exchange of those times, he found food for his love of the ideal, for there was concentrated the religious life of the people, and their political deliberations and designs were undertaken under the immediate influence of their glorious historical past.

The Agora of the older cities is not to be conceived as a place regularly laid out and built up; the later colonies first made the spot an ornament to the city. In the closely-built capitals the market-place often became, in course of time, too small, and larger places had to be provided for the popular assemblies. In Athens the Pnyx served this purpose. It was a semicircular space on the declivity of a hill opposite the judgment-place of the Areopagus, bounded by the hewn natural rock of the hill and by walls, and containing opposite the semicircle the *bema*, or stand for the speakers. When at length this place became too small, the assemblies were held in the theatre of Dionysus.

We may remark here that Athens possessed in the second century B. C., in the so-called "Tower of the Winds," a sun-dial and a water-clock, and also a vane in the form of a triton which turned to show the direction of the wind; the possession of these was held to be an advantage by no means everywhere attainable. This tower is well preserved, and is delineated in Vol. IV. (*pl.* 8).

The Stoa are finally to be mentioned. These were porticos, closed with a wall on one side and presenting an open hall on the other. At times they consisted of two halls running parallel with the interior wall; sometimes they were built so that pillars, occasionally as many as five rows, alone supported the roof. They were especially used as meeting-places for the philosophers, to which circumstance, indeed, one school, that of the Stoics, owed its name, but they also served for other assemblies and as public promenades.

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and beseechings, as is true of so many other institutions, was developed from the contemplation of Nature. Heroes and gods had their origin in the powers of Nature, which the youthful, creative fancy of the people made incarnate and supplied with symbols, just as we found was the case with the most ancient peoples. But the mighty spirit of independence in the Greek character rebelled against the condition of restraint which is the foundation of all religious life, and settled the question of religion by entrusting its treatment not to a priesthood, but to the poets and artists. Herodotus himself had already come to the conclusion that the poets had created the gods for the people. But this observation is only half true. There was indeed a world of the gods created by the poets and represented by the artists, but it did not claim to be anything more than what it actually was—a creation of poetry, a subject for art known to every cultivated person and having a reflex influence upon the beliefs of the people. But so much of ancient tradition was retained that the latter continued to furnish the essential element, and the form alone for the most part was ennobled by art.

Mythology.—The worship of local deities was so prevalent in Greece, and the ceremonies connected therewith were often so naturalistic as contrasted with the æsthetic Olympus imagined by the poets, that its original derivation could not remain a secret. The essential character of the latter, in which the soaring intellectual impulses of the nation were concentrated, lay in the distinct assertion of pure humanity beside the forces and operations of Nature symbolized as attributes of divinity, and manifested in its qualities and even in its caprices. Thus the Grecian mythology received that intellectual impress which was the special source of its subsequent fame. We refrain from describing the different gods, their relations to one another, and their histories, since every cultivated person may be presumed to have a sufficient knowledge of classical mythology. Plate 27 contains a view of their splendid forms, copied from antique models.

Conclusion.—In the course of its intellectual growth, Greece also reached a point where intelligence rejected the simple ancestral faith, and, as in all similar cases, the process was negative as well as positive. This process and its consequences belong indeed to the History of Culture, but, like many cognate subjects, they must be omitted from the present sketch.

The Greek colonies spread the national civilization, manners, and mode of living over a great part of the then known world; especially was this influence felt in Southern Italy, which was in consequence called Magna Græcia, and in Asia Minor, where Greek culture remained widely prevalent and deeply rooted until overwhelmed by Mohammedanism. Before proceeding to the consideration of the elements of development of more Western nations, it will be of advantage to turn again to the East, where manifold peculiarities and blendings demand a passing glance.

VIII. THE NATIONS OF ASIA MINOR.

THE teeming populations of Asia Minor are unfortunately too little known, apart from the Greeks who had settled among them, to enable us fully to explain and appreciate their status. It is to be inferred that they were composed of small groups of Aryan and Semitic tribes, the former having migrated from the east, the latter from the south. Greek colonies, especially along the western coast, introduced a superior culture in the domain of the fine arts into the civilization of the land, to which the nationalities from Central Asia contributed technical skill. Incapable of uniting in a political whole, the nations of Asia Minor were at the mercy of foreign invaders.

The Kingdom of Lydia, best known from its last king, Cræsus (568-554 B. C.), made an attempt by subjugating the various tribes to establish a monarchy in the ancient sense of the word, only to be itself subdued by the Persians, who made a satrapy of it, and after its subsequent conquest by Alexander the Great its inhabitants enthusiastically adopted Greek civilization. Possessed of a fertile soil and industrious habits, its people never at any time lacked a certain degree of prosperity, of which the Greeks had much to tell, and from which they derived manifold suggestions. The riches of Cræsus have become proverbial.

Homer, who had evidently seen what he describes, praised the costly garments, the rich jewelry, and the artistic weapons of the Lydians. Their cloths and dyes, especially the purple, were famous. The carpets of Sardis were as highly valued then as those of Smyrna are to-day, and perhaps there is an uninterrupted historical connection between the two. The islands of Cos and Amorgos furnished fine transparent materials for dress (*pl. 28, fig. 9*).

Dress was distinguished by its completeness and by its brilliancy (*figs. 1-8*). Embroideries in gold and bright colors were widely known, and ornaments of gold were even woven into the garments. Herodotus speaks of the aversion of the Lydians to nudity—a dislike which they shared with all non-Hellenic nations, but which seemed remarkable to him. The northern origin of one or another of the predominant tribes no doubt affords a natural explanation of this trait. Trousers, coats with sleeves, shoes, etc., which were in general use in Asia Minor, were worn in lively colors by the Scythians as early as 400 B. C. Influences upon dress emanating from Central Asia are no less distinctly observable, but its specific and harmonious character was derived from the Greeks; at least it was chiefly they who furnished the designs with which throughout the apparel was decorated. The Phrygian cap (*fig. 8*) seems to have been originally peculiar to the country; it covered the back of the neck, curving forward

toward the top of the head, and was sometimes supplied with cheek-flaps which could be fastened under the chin or on top or behind the head.

The garb of the women, like that of the men, was worn so as to conceal as much of the body as possible, compensating for the concealment of natural charms by its ornamentation and beauty of color (*pl.* 28, *fig.* 6). The extreme elegance of these costumes as they are seen in all the delineations is no doubt to be attributed in great part to the fact that they have been transmitted to us only by means of Greek works of art. However, the Roman writers also speak of their beauty; accordingly, it must be admitted that the garments were essentially tasteful.

Civilization.—The entire absence of works originating with the people themselves leaves many phases of their civilization in complete obscurity. But the very fact of this lack, which itself testifies to their possession of only a low degree of creative activity, enables us to conclude with some appearance of probability that their life was absorbed in empty pleasures and moulded on foreign forms, and to reason from analogy as to the character of their civilization. Additional evidence is afforded by what we learn from their furniture and utensils (*figs.* 12-17), which seem to be entirely Greek.¹

Social Life.—As regards the mode of life of the people, ancient authors speak of their extreme fondness for sociability, which assembled not only the men, but also the women and, as we are assured, even the children, to participate in great banquets. In the time of the Roman empire going to Asia meant seeking a life of pleasure, such as was implied in the last century by a visit to Paris. The Lydians claimed to have invented most of the games and forms of social amusements known to antiquity. It is easy to understand how these nations could devote themselves to the development of social life, since they were never called upon to develop a political life.

Sepulchres of the Lydian Princes.—The princes of the Lydians had their sepulchres beyond the Hermus, on a rocky plateau about five miles to the north of Sardis, between the Hermus and the southern shore of the great Gygæan lake. On this field of the dead, which the Osmons call Bin Tepe—*i. e.* the thousand hills—there rise to this day from sixty to eighty tombs, among which three huge round tumuli stand pre-eminent. The smallest of these is 2000 feet in circuit and 110 feet in height; the largest is more than 3500 feet in circuit, and rises about 230 feet above the plain directly opposite the acropolis of Sardis. King Alyattes rested under this

¹ What degree of civilization had been reached by the Lydians about the year 1000 B. C. we can only conclude from the fact that the Greek settlers on their coasts found money already coined by the Lydians, and therefore ascribed to them the invention of the art of coining. The art of dyeing wool also was, in the opinion of the Greeks, an invention of the Lydians; and games at ball, as well as at dice, were thought to have been learned from the Lydians by the Greeks. That the Greeks made use of the Lydian flute, and subsequently of the Lydian cithara (both the cithara with three strings and that with twenty strings), and the Lydian harmonies to enrich their own music, is an established fact. The Homeric poems describe the Lydians (Mæonians) as an "armed equestrian people," and mention their trade and wealth. (Duncker's *History of Antiquity*, vol. i. p. 569.)—Ed.

mound, concerning which Herodotus tells us, "Lydia possessed a work which is the greatest of all, except the work of the Egyptians and Babylonians, and it is the monument of Alyattes." The Lydians preferred to bury their dead in chambers of rock; where these were not to be had, they buried them in chambers of strong masonry, over which were placed layers of stone in a circle, to be finally crowned with the sepulchral tumulus. In the same manner, only on a larger scale, the tombs of the kings were prepared. (Duncker.)

Eastern Asia Minor.—While the civilization of the western half of Asia Minor, though not so substantial as that of Europe, had become so refined as to be attractive to the Greeks and Romans, the eastern portion remained in its original barbarity. We have already presumably met its inhabitants, the later Cappadocians, among the Egyptians (p. 158), and but little more than community of race can be affirmed of these peoples. Homer mentions a number of tribes belonging to that region, from which Xerxes recruited his immense army. Barbarous tribes from the North, probably of Sarmatico-Scythian origin, settled along the southern coast of the Euxine and laid the foundations for the kingdom of Pontus.

The well-known historical invasion of the Gauls (about 277 B. C.) drove the native inhabitants farther into the interior, without, however, leaving any noticeable traces of the state of civilization of the Galatian tetrarchies which the invaders there established. Herodotus and Xenophon speak of hairy garments and bag-like coverings for the legs, which were still further protected among some tribes by leather leggings reaching to the knees—a form of dress which corresponds fully with that worn by the Scythians in Southern Russia as early as 400 B. C., and also with that which, though less rude, was worn in the western part of the peninsula.

Dwellings.—According to Xenophon, the dwellings of the natives were block-houses, which preserved their primitive simplicity even in proximity to Greek centres of culture. Their settlements were sometimes securely located in the mountains, or if situated on the plain they were fortified by wooden towers or surrounded by palisades, ramparts, and trenches.

Industries.—The abundance of minerals in the mountains developed one industry to a surprising extent. Æschylus speaks of the "wild and barbarous smiths" of that country, and Virgil praises its manufacture of steel. The Cappadocians proper occupied themselves above all with the breeding of horses, and they constituted the flower of the Persian cavalry.

Their costume is so described as scarcely to allow us to doubt their relationship to the Scythians. This conclusion is strengthened by the character of their occupations. A very ancient rock-sculpture in Northern Cappadocia—the exact nature of which, however, has not yet been fully determined—contains figures in long flowing robes (*pl.* 28, *fig.* 1), and seems to indicate a connection with Asia proper. It is certain that the religion of Asia Minor was influenced from that quarter, for, though

in the West it was Greek in character, its general texture was an unedifying mixture of Babylonian, Syrian, and Hellenic elements.

Grecian Influence.—The silent influence of Greek civilization on those vast regions would have succumbed to the sensuality of Asia (besides failing to make any impression on the barbarism of the remote and ruder tribes) had not the sword of Alexander and the care of his successors protected it. That germs of a higher civilization existed in that land is shown by an after-glow of Greek culture, even in the domain of its art and poetry, which appeared in various places; as, for example, in the kingdom of Pergamus. That those germs were preserved is evident from the fact that the apostles chose Asia Minor as the principal scene of their activity, and that Paul organized Christian churches even in Galatia (Acts xvi. 5, 6; xviii. 23). To develop these germs more powerful means were necessary than any at the command of the Macedonian empire. The accomplishment of this task, not only in the regions just described, but in many others, fell to another people, whom we shall now proceed to consider.

IX. THE ROMANS.

THE Romans were in the strictest sense an historical people. Unlike the development of other nations upon an original soil and under favorable circumstances, the history of Rome begins with a struggle against immediate surroundings; the surmounting of internal as well as of external obstacles was the condition of its existence as a state. And when the latter had been securely established, and the question of existence had given place to the impulses of activity, we see the Romans turn away from all indigenous culture to become the representatives of Grecian civilization, which they carried with them over Africa and Europe to the shores of the ocean, and whose dissemination took the form of a jurisprudence which formed one of the mightiest influences for all future development.

Origin.—Nevertheless, the individuals who established the Roman state and laid the foundations of its subsequent empire belonged by birth and education to a distinct nationality, and it would be of great importance could we learn with what traditions they began their labor; for legend, differ as it may from history, has its basis in fact. Unfortunately, little more can be said than that the Latins, as is clear from their language, had the same Aryan origin as the Greeks.

The Etruscans.—Among the numerous tribes which crowded in prehistoric times from the North southward into the Italian peninsula, the Etruscans alone, who appear on the scene before the Romans, had attained a high degree of civilization. Yet this very people is represented to us as a mixed race, although we are unable to learn exactly what elements had been added to the original stock.

Should the inference which has been drawn from late investigations be substantiated, that the Etruscan migration into the peninsula took place not from the North, as has hitherto been supposed, but rather from Egypt, many points thus far enigmatical would find a ready explanation. For the artistic and industrial productions of the Etruscans, of which numerous remains are extant, have such a resemblance to those of Egypt that cantile intercourse with the inhabitants of the banks of the Nile, which is proved to have existed, does not suffice to explain the similarity. The *scarabæus* (*pl. 33, figs. 9, 10*) itself, which is specifically Egyptian, has been found among Etruscan remains. Yet the style of these remains, which are chiefly small articles, shows peculiarities that seem entirely national and cannot easily be accounted for. Perhaps the earthen vessels (*pl. 4, figs. 91-95*) which have been found in the Italian palefittes, and which seem to contain the germs of a similar style, have some connection with them.

Etruscan Utensils, etc.—We repeat what we have already stated (p. 49), that during several centuries before their appearance in history the inhabitants of the countries north of the Alps probably derived from Etruria the bronze articles which constituted their household goods and articles of luxury. These objects, the shape and ornamentation of which are entirely characteristic, and which are found even more abundantly in the south, along the northern slopes of the mountains, than toward the coasts of the northern seas, are very different from the productions of native industry of which we shall treat hereafter. Plate 33 represents a number of vessels (*figs.* 13–31) and some utensils and articles of jewelry (*figs.* 36, 37, 54, 55), all of which exhibit this peculiar style and evidently belong to some highly-developed civilization. Etruria is still more remarkable for its architectural achievements; but the consideration of these does not belong to our task. (See Vol. IV.)

Etruscan Commerce and Industries.—The extensive and profitable commerce of the Etruscans with foreign nations, and the flourishing condition of the native industries, which supplied materials of export for the former, enabled them to display a degree of stateliness suggestive of city life at a time when rural simplicity prevailed throughout the rest of Italy. This is shown, too, by ancient representations of their costumes, the precise dates of which, unfortunately, cannot be ascertained.

Costume.—The Etruscans had invented a peculiar cut of dress which was widely different from the later Roman style, and which probably was in use at a time when their future conquerors had not yet adopted the toga, the principal article of their grand national costume. Figures 1 and 2 (*pl.* 29) are illustrations of male and female Etruscan attire. Besides these, there were various other styles. Legendary history tells of their great pomp and of their gold-embroidered and gayly-colored dresses—luxuries which need not surprise us in a mercantile people. The Romans, whose political arrangements prevented capital, which has no country, from circulating freely, did not for a long time attain such a degree of splendor.

It is worthy of note that finely-woven transparent fabrics, such as we have found among the Egyptians (p. 123), were used also in Etruria. But it must remain uncertain whether they were acquired by commerce or were the domestic products of an art which the people had learned in their original home. The garments of the Etruscans were always worn long, and indicate a certain effeminacy. The only thing they had in common with the Greeks and Romans was the custom of leaving the legs unprotected.

The early termination of their national existence interfered with the development of their culture in the various directions which their native talents and industry would scarcely have failed to take. It especially prevented them from leaving written records of their attainments, which would certainly have enlightened us in regard to much that is now utterly obscure. Even the few monumental inscriptions they have left

us have not yet been deciphered. It is certain that they continued the pursuit of their industries under the Roman rule, and adhered to their traditional style even after that of the Greeks had become everywhere prevalent through the influence of the Romans.

Roman Culture.—Regarding the Roman people, we must first of all declare ourselves opposed, from the standpoint of the History of Culture, to the generally received theory of historians, which has thus far never been disputed, and which represents the period of the Republic as one of glory and progress, and the period of the Empire as one of corruption and decay. Carried away by the barbarous virtues of the Republic, such as we find displayed neither before nor since in the same absoluteness, and dazzled all the more by these virtues because they enable us by an analogy to fill up perceptible gaps in the early history of other nations, we fancy that nothing not equally imposing can be worthy of admiration. But virtues are certainly to be judged less by the admiration they excite in posterity than by the sources from which they sprung, and particularly by the benefits they conferred upon the contemporary world.

Since the purpose of all history is culture, which in its essence is nothing but civilization (we need not now give a more philosophical definition of the term), surely we should give the domestic at least as high a rank as the public virtues, provided both are alike effective in their respective spheres and exist in equal measure. The latter have always the advantage of appearing on the stage of history and of being admired; but in order to estimate them rightly it is necessary to examine the foundations. The former rarely become public, and are never recognized unless genuine.

Unless we look for political merit alone, we need but read the letters of the Younger Pliny to be convinced that Rome in the second century A. D. was far superior as regards real culture to what it was two hundred years before our era. The genuine Roman spirit itself is found represented in a manner not inferior to the best times of the Republic. If this spirit does not appear upon the public stage, it is because it finds nothing to do there. Within its narrower fields it is none the less important, and it has besides the advantage of viewing events with far less prejudice and with a sharper intuition than it had previously been accustomed to exhibit. The testimony of Tacitus himself is fully confirmatory of this.

The relation between husband and wife, which is always the test of the moral culture of a people, had at the time of Pliny (as we learn from his letters) become so pure and noble that in this respect the Romans far surpassed the Greeks, and the times of the emperors excelled those of the Republic. We are far from agreeing with that modern degeneracy of historical description which, among other attempts, seeks to palliate the crimes of Tiberius on the ground of custom. But the appearance of some of the corrupt emperors need not dismay us. We learn definitely from later writers that the mass of the people regarded them as objects

of moral indignation and abhorrence rather than as models to be imitated. The better rulers among them deserve our admiration all the more because on the dizzy heights of absolute power upon which a Roman emperor stood his virtue must have been firmly rooted indeed if it were to remain unwavering.

Neither must too much importance be attached to the debaucheries of the later Romans. Their vices have been proclaimed to the world, but their domestic virtues, and especially their civic merits, have had no historian. The events of later times, at least, can always be brought before the powerful tribunal of civilization, but not so the gross selfishness which the privileged classes of ancient Rome opposed to the just demands of the plebeians, the acquirement and defence of whose rights occupied a considerable space in the history of the state until its political greatness fell to the ground only to be resolved into a more humane system of morality.

But that which distinguishes Roman culture from all preceding phases is to be found in the fact that it awakened the consciousness of the rights of humanity, though almost exclusively in opposition to its wrongs; and its merit in this respect is the more noticeable that this sense was communicated, in a greater or less degree, to the subjects of Rome. The Republic had to allege a pretext for its acts of oppression—a thing before unknown in history; the Empire needed, at the worst, only a palliation. It was at least the beginning of accountability. The development of mankind, previously artless, became reflective; previously natural or fortuitous, it became designed and systematic.¹

Dress.—According to Roman writers, a simple wrap constituted the original dress of the people. They confounded it, for obvious reasons, with a similar garment, the *toga*, worn in their own times; but the two were widely different, for the former was intended only as a protection against inclement weather, and was worn according to each one's pleasure, fancy, or need, while the later *toga* must be regarded as the national costume *par excellence*.

But we must first say a word about the *tunic* (*pl.* 29, *fig.* 3), which formed the simple house-dress of every Roman, the attire of the working-classes, and the under-garment of the costumes of the better classes. It was a gown-like garment which fitted either loosely or tightly, and was closed all around, though supplied with openings for putting it on. The

¹ No one disputes the fact that the degeneracy of manners and the decline of public spirit preceded the establishment of the Empire, and were, in fact, the main cause of it. Nor is it questioned that refining and humanizing influences were at work in the later periods that were absent in the earlier ones. But the distinguishing Roman virtues were never so conspicuously displayed as in the best days of the Republic, when an intense patriotism was the safeguard of private as well as public morals. Both Cæsar and Augustus sought to revive the former standards, but with little effect. Neither Pliny's pictures of the social life of his own circle, nor the many historical examples of splendid virtue associated with the diffusion of the Stoical philosophy in the first centuries of the Empire, outweigh the abundant testimony that exists in regard to the generally depraved tone of that period. Of course it is chiefly to Rome itself that this applies. In an empire that embraced nearly all the countries of the East and West great disparities must have existed.—Ed.

arms were covered with flowing drapery or with real sleeves, and it was girded about the hips, so that when drawn up it reached about to the knee.

The toga (*pl. 29, fig. 4*) consisted of an oval piece of cloth about three times as long and twice as wide as the wearer. It was folded lengthwise, and with the long straight edge so obtained, and with the smaller segment on the outside, it was thrown over the left shoulder, so as to cover entirely the left side of the body, one end hanging down in front and over the left arm to the feet; the long end at the back was then drawn forward under the right arm across the body, and again over the shoulder or arm of the left side, and hung some distance down the back. To cover the right shoulder the upper part of the double piece hanging behind was drawn forward over that shoulder, while the end hanging at the left side in front was drawn across to meet it, and thus a fold or pocket was formed in front of the breast. We learn from ancient pictures that the toga was also worn in other ways, but always in an artistic manner. In fact, so much attention was paid to its artistic drapery that we read of a lawsuit having been caused by a disarrangement of it.

These two garments, the tunic and the toga, together with the sandals or shoes which all wore, constituted the entire costume. When the Romans grew more sensitive to the seasons they wore several under-garments, in which case the lower tunic, or *subucula*, was narrower and was alone girded, while the upper one, the *supparus*, constituted a kind of upper shirt. The toga was considered as a mark of citizenship, and was the true robe of honor. It was not intended nor adapted for all purposes, for no work could be performed in it, nor when worn was even a quick movement of the body possible. Accordingly, the need of a freer upper garment was felt, one which should require less consideration; and this want led to the invention of the mantle, which covered the left arm and was fastened on the right shoulder. Later custom adopted also other garments of foreign origin. The legs and the head were generally bare. But in later and more effeminate times the civilians adopted the short, close-fitting coverings of the upper leg worn by the soldiers. Fishermen, hunters, boatmen, and others whose duties required them to be much in the open air used caps of felt, leather, or plaited straw. The Greek hat was also used as a protection against the sun.

Custom and fashion were not the only arbiters of the Roman costume. It was in full accord with the strict organization of the state to extend its supervision over the dress. The true national costume, the white toga, could be worn only by free citizens, and these were forbidden to put on any other garment even when absent from the city. The clients or half-citizens wore the tunic and an especial wrap. After the patricians of Old Rome had been overthrown by the plebeians, and the aristocracy of blood had given place to that of office, no less degree of splendor of costume was sought by the ruling classes. A ring of gold supplanted the iron one; the amulet which all carried was kept in a golden case; and the tunic was

decorated with a broad purple stripe (*clavus*) from the neck to the lower hem (*tunica laticlavica*). The knights wore, besides the gold ring and two narrow purple stripes on the tunic (*tunica Augusticlavica*), a purple binding on the *trabea*; that is, the chlamys-shaped mantle of horsemen. Under the emperors differences of rank ceased to be perceptible from the dress. The dress of the Roman peasant, as is partly the case to-day (*pl.* 29, *fig.* 9), consisted of skins. Courtesans were prohibited by law from wearing the costume of respectable women.

We possess scarcely any information about the costume of the ancient kings; but the state dress of the consuls consisted of the *toga prætexta*, which had a purple border throughout, and white shoes in contrast to the black ones of the senators. To indicate their supreme power as judges, the consuls were each attended by a train of twelve lictors (*fig.* 8), who bore bundles of rods enclosing an axe. They were obliged to remove the axe when inside the city limits. A dictator alone, who moreover had twenty-four lictors, was exempt from this obligation.

Domitian was the first of the emperors to assume the purple toga (*toga purpurea*), though it had already been worn by Cæsar; Augustus, for political reasons, did not assume it. Later emperors, Elagabalus, Diocletian, and others, even sought pompous Oriental costumes: the last-named ruler introduced the diadem of pearls and other articles as official decorations. Constantine, whose position was in no danger from constitutional changes, increased still more the external splendor of the imperial office. The policy of his predecessors had been to add to the splendor of the state officers, especially that of the consuls, in proportion as they deprived them of real power and reduced them to the condition of mere court-officials. Thus we find the consuls wearing embroidered garments (*figs.* 13, 14) and honored by special distinctions, such as golden shoes, the sceptre, the curule chair, etc.

It would lead us too far to follow in detail the manifold variety of costumes of the numerous staff of courtiers and officials. But it is noteworthy that the state dress or toga disappeared with the glory of the Republic. Augustus endeavored to retain it by law, requiring it to be worn in office and probably at court. But, as though its inner life and meaning had departed, it shrank from its old dimensions. In Figure 14 it appears as a narrow band wound about the body, very unlike its original shape. It continually diminished in size until it became in the Byzantine costume a mere ribbon no wider than the hand, and finally it survived only in the *stole* still worn by the clergy of the Roman Catholic Church.

Indeed, in order to move about or feel at ease in the heavy folds of the toga it was necessary to have the consciousness of being an actual sharer and supporter of the majesty of the people. When the Roman citizen was relieved of the burden of public cares, and was consequently more at liberty to feel and act simply as a man, he needed a freer garb. Later, when the army, which constituted the real support of the Empire, became

more and more prominent, especially when its importance became absorbed in the overpowering influence of the Prætorian guards, the civilians adopted the military costume, above all the mantle (*sagum* or *sagulum*) fastened at the shoulder. Figure 12 (*pl.* 29) exhibits the military uniform of a late period. It is from an ivory relief preserved at Monza which formed a companion-piece to the picture of the empress Galla Placidia (*fig.* 10) and her son, afterward Valentinian III. (*fig.* 11). It probably represents one of the noted generals of that time, either Aëtius or Boethius. We notice that trousers (*braccæ*) are already fully developed, not only in the representation of the general (*fig.* 12), but also in that of the prince (*fig.* 11). The lower classes alone (*fig.* 15) left the legs unprotected, and even they covered at least the lower part of the limbs.

But variations in the cut and use of dress must necessarily have occurred in the vast empire, with its variety of climates and multitude of different peoples. We give in Figure 16 an illustration of the dress worn in more northerly regions. It is from the tombstone of Blussus, otherwise unknown, found in the Palatinate. It consisted, besides the trousers and the long tunic, of a sleeveless upper garment provided with a hood. We recognize in the picture of the empress (*fig.* 10) the type of female attire belonging to this period—a toga-like garment worn in the ancient manner over a complete dress of under-clothing, whereas the wife of Blussus (*fig.* 17) has several upper garments fastened by clasps.

The simple house-dress of the Roman matron (*fig.* 5) consisted of a long sleeveless gown (*intusium* or *interula*) fastened on the shoulders and girded below the breasts. In going out she wore over this, unless she were a person of rank or dignity, a shorter one with sleeves (*stola*). Departures from the above-described style also occurred, more decided in the case of female dress than in that of male attire: such variations are particularly to be ascribed to the manifold relations which Rome maintained with foreign nations. For further protection a piece of cloth, or a mantle, or similar article, was worn. The matron of rank, however, appeared in public dressed in the *palla* (*fig.* 6), a kind of toga identical with the Greek himation, which, if possible, was worn even more artistically than the toga of the men, and with a veil (*flammeum* or *ricinium*) over the back of the head.

Wool was the material employed for garments by both sexes in early times. But the conquerors of the world acquired among their other booty the fine dress-materials that had long been in use in other lands: that the women especially should have availed themselves of the fruit of their husbands' bravery is not surprising. It must be noted too, as a sign of progress, that the state prohibited excessive luxury.¹

Jewelry and Ornaments.—The jewelry of the men consisted simply of a seal ring, which in the beginning was of iron, but later of gold decorated

¹ Sumptuary laws, always ineffectual, were enacted at different periods. But perhaps the author's meaning is that the increase of luxury, not the prohibition of it, was a sign of progress; which would be true in a certain sense.—ED.

with a cut stone. More, of course, is to be said of the ornamentation and finery of the women. The latter were such apt pupils that they soon excelled their skilful Greek teachers in the adornment of their persons. But, prosaic as they were by nature, they tried to attain every charm by art, while the Greeks, with their usual good taste, were satisfied to assist Nature. Diamonds and pearls were considered the most precious articles of ornamentation, and millions of money were paid for fine specimens. Seneca complained that many a woman carried a fortune in her ear. Besides, the Roman ladies wore various kinds of head-, neck-, and bosom-decorations, brooches, bracelets (*fig. 2, pl. 32*), rings (*figs. 5-7*), fans, parasols, etc. These, as has been remarked, bore the stamp of Grecian art.

Hair-dressing.—The hair and the beard were worn long by the early Romans, but at a later period barbers—from Sicily, it is said—came to the capital, and the custom of cutting the hair short and shaving the beard was introduced. The wearing of beards was reintroduced by some of the emperors. The slaves were distinguished from the free citizens by their long hair and unshorn beard. The coiffure varied so much in later times that no one style can be selected as typical. In no other period was the use of false hair so general. It was worn frizzled or in long curls, or arranged like a cap in its natural color or powdered with gold-dust. For a time wigs made of the blond hair of the German women were the fashion.

Odoriferous ointments, oils, cosmetics (*fig. 8*), etc. were well known to the Roman women. The satirists often ridicule the women for their fondness for painting and for artificial adornments. The excavations at Pompeii have laid bare the secrets of a Roman lady's toilet. Figures 3 and 11 give a few specimens only of the articles used; the mirrors (*fig. 3*) were round or oval plates of polished metal with ornamented handles; an erotic picture was generally engraved on the reverse.

Dwellings.—A remarkable Etruscan cinerary chest (*pl. 33, fig. 1*) and an earthen urn (*fig. 2*) found in the Albanian Mountains give us an idea of the earliest Italic domiciliary architecture. The latter is to be regarded as a model which exhibits the most primitive style of Roman dwellings. From it we learn that they consisted simply of a single apartment, built of latticed work and covered with a roof of straw, and serving the purpose of kitchen as well as bed-room: the Etruscan house (*fig. 1*) seems somewhat farther advanced; for although the base upon which it rests is perhaps not to be looked upon as a constant characteristic, it nevertheless proves an acquaintance with the use of foundations. We may presume that the walls were built of bricks and that the projecting roof was shingled. The city of Romulus may have consisted of such huts. The domestic architecture of a later time was entirely different, but it still bore traces of its origin.

The primary and cardinal element of a Roman dwelling was the *atrium*, a smoke-blackened room which was entered directly from the street or

through the main door from the court. It contained the sanctuary of the household—i. e. the altar and the hearth, originally one and the same. An opening in the ceiling admitted light and gave exit to the smoke. The marriage-bed stood opposite the entrance. Between it and the hearth lay the sphere of the wife. Thus we observe in the very arrangement of the room the chief difference between Greek and Roman life. In the one the exclusion of the females from the abode of the men, in the other the community of the life of both, is at once apparent. Even when the house was enlarged by the addition of many other apartments, the atrium continued to be the real home of the family as well as the reception-room for guests, and in the homes of the nobles it was the hall in which the images of their ancestors were placed.

In this room also they obtained in a very peculiar way the water which they needed for domestic purposes. A basin, called the *impluvium*, was excavated in the floor directly under the aperture in the ceiling, the *compluvium*. The roof was inclined toward the aperture, so that all the rain-water which fell upon it flowed into the basin. This arrangement is noteworthy, because it is the first appearance in the history of domestic architecture of an inclined roof. Previously flat roofs alone had been known. The arrangement appears still more singular when we reflect how inconvenient it must have been during heavy rains, and especially since the house-shaped urns mentioned above show already an elevation in the middle of the roof for shedding the water on the outside.

Later on, when the atrium had grown into a stately hall surrounded by side apartments, and the roof had consequently become very large, the Romans attempted to overcome these difficulties by the use of pipes. But, to judge from contemporary complaints, the attempt was not entirely successful. A cover erected above the aperture, the so-called "tortoise-shell," was an insufficient remedy. Yet they did not think of changing the system itself. On the contrary, it was transplanted to northern countries, for which it was still less adapted.

Gradually, as the need arose and as we have mentioned above, the apartment was surrounded by chambers at the sides and even in front. A free space was reserved for the entrance alone, which eventually became an open hall or *vestibulum* (dressing-room). In this hall visitors put on the toga, or at least arranged it properly, and adjusted the toilet generally. While the ordinary class of citizens were satisfied with the house as thus enlarged, the better classes looked for more than mere shelter. The Greek dwelling of the last centuries B. C. suggested what they needed. The *peristyle* with its adjoining rooms was adopted, and thus the way was prepared for the magnificent architecture of imperial times, which reached its acme in the Golden House of Nero, the *Thermae* of Caracalla, and other extravagant palaces. (See Vol. IV.) Plate 31 (fig. 2) illustrates the usual ground-plan of a Roman dwelling. It will be easily understood from what has been said.

Figure 1 represents the ground-plan of an excavated dwelling at Pom-

peii. It presents a characteristic which is to be regarded as customary in the case of all the larger city residences; that is, it shows a number of rooms opening directly on the street, and in part at least wholly separated from the interior of the house. These were small rooms rented to tenants for stores, cook- and work-shops, etc. We also find in some buildings a row of guest-chambers separated by a court from the house proper. The custom existed of entertaining guests at the host's table at the beginning of their visit only; afterward meals were served in their own apartments, and the utmost possible freedom was permitted.

Figure 3 (*pl.* 31) shows the longitudinal section of a Roman house. The roof slanting toward the centre, the compluvium and impluvium, as well as the peristyle, are readily distinguished. Figures 4 and 5 show the handsomely finished atrium and skylight of later times; and Figure 7 is one of the cook-shops above referred to. These have been restored in accordance with remains found at Pompeii and Herculaneum and from incidental statements of Roman writers. Figure 8 is the ground-plan of a palace, that of Diocletian at Spalato, the ruins of which are very well preserved, and in Figure 9 we have an illustration which explains a part of its interior arrangement. It was a rectangular edifice, 630 feet long and 510 feet wide, surrounded by walls and towers. The private rooms of the emperor are supposed to have been situated in the narrow side looking toward the sea. The rest of the palace was divided by two streets intersecting each other and forming four squares, lined with pillars, in two of which were temples. The principal entrance was on the narrow side that looked inland. We need scarcely remark that then, as now, the details of the plan varied according to the taste and means of the owners and the site and purpose of the building, and that consequently there were many deviations from the general rule.

When the atrium became developed into a magnificent hall, it naturally ceased to be used for domestic purposes. The kitchen was relegated to its own separate room; the rains were carried off by means of pipes, and the impluvium was replaced by a well in the court. This court, or *cavædium*, surrounded by a portico, closely resembled the peristyle, the only difference being that the former was used for purposes of domestic life. Like the atrium, it was surrounded by rooms opening into the portico. The peristyle was converted into a drawing-room surrounded by the more elegant apartments; its open court was laid out in one of those charming little gardens (*fig.* 6) the arrangement of which can be easily recognized even to-day among the ruins of Pompeii. Its centre was usually occupied by a basin from which a fountain bubbled and which also served as a fishpond. The whole garden had a brilliant architectural setting, and its delicate tastefulness culminated in these artificial fountains.

In one of the gardens we see a sort of grotto ornamented with mosaics, from which the water once flowed down several white marble steps into a basin lined with marble and surrounded by sculptures whose dazzling

whiteness still forms a fine contrast to the dark-blue groundwork of the grotto. Small flower-beds divided by narrow gravel-walks surrounded the central basin. Beautiful plants, which still grow around the ashes of Pompeii, formed a magnificent background of bright colors for the diminutive masterpieces of sculpture which occupied every ledge. The *tabulinum*, or study, of the master of the house, reception-rooms for intimate friends, the dining-room, the grand saloon, picture-gallery, library, etc., were located immediately adjacent to the garden.

Houses which did not possess all these luxuries were at any rate provided with every facility for bathing. The Romans in general were so accustomed to the use of the bath that they could not dispense with it even in northern climates, where in order to obtain a more moderate temperature they had to construct it deep in the earth. Figure 10 represents a bath, or *nymphæum*, from excavations near Salzburg.

The increase of population in the cities necessitated the addition of one or more stories to the houses. In Rome it became necessary finally to prohibit the excessive piling up of such additions. The upper stories were lighted by small windows (*pl. 31, fig. 3*); the ground-floor, which always remained the chief place of resort, retained its old arrangement. The family life of the Romans was entirely withdrawn from public gaze.

The material of which the houses were built depended, of course, on the nature of the country. It was generally brick, with stone for the foundations. In the beginning shingles were used for the roof, and later on excellent tiles (*pl. 32, fig. 48*), of which so many specimens have come down to us. The manner of heating which they employed during several centuries in their northern possessions was unexcelled. Heated air was conducted beneath the hollow floors and by means of pipes concealed within the walls to the upper stories. The rooms were usually smaller than they are in our better houses, and but poorly lighted; the walls were frequently dark in color, or even black, and painted with domestic scenes, mythological representations, comic figures, or erotic groups, according to their different purposes.

House-furnishing.—In furniture and household utensils it will readily be believed that the Romans, who were heirs to all the culture of preceding generations, would not remain inferior to any people. Excavations show us the manifold variety of domestic articles. A selection seen on *Pl. 32* exhibits the characteristics of some of them. The prevailing style is Greek, which, indeed, could not be considered foreign in Southern Italy with its Greek colonies, and which had been early domiciled in Rome itself. There remains no room for doubt that with the Romans, too, beauty was the end sought in all articles of luxury, and it must be admitted that in this respect the highest point was attained, while it is none the less true that as regards utility they had scarcely progressed beyond the childhood of practical art. Our most magnificent chandeliers are inferior to the candelabrum (*fig. 40*) with its fine proportions, and yet the latter only supported a dim oil lamp to illuminate the room.

The farther we go back into ancient times, the more important, and also the more difficult, does it become to determine which of the numerous remains were of domestic origin and which were the product of foreign industry. In the Etruscan tombs we find Greek vases and vessels made of ostrich egg-shells, decorated, both of which were certainly of foreign origin. It is also very probable that the small cups and flasks (*pl.* 33, *figs.* 6, 8) of glass and bluish-green enamel which have been found with the clay and metal articles of home manufacture were productions of the East. The fantastically shaped vessels (*fig.* 7) of unburnt black clay are undoubtedly of native Etruscan make. They were succeeded by red ones burnt in imitation of Greek wares.

Whatever is found in strictly Roman territory may be set down (as far as our present subject is concerned) as either Etruscan or Greek, for the Romans learned from both peoples successively, and they did not repress the enterprise of the nations whom they conquered, but on the contrary developed it. The Etruscans, as soon as they found themselves excelled by their Eastern competitors, ceased to make the finer wares. They continued, however, to manufacture those for common use, and thus we find in the Roman colonies, in late times, Etruscan vessels and other utensils of bronze by the side of Greek articles of luxury. All these latter may safely be considered works of the Greeks, who supplied without competition all the chief cities of the empire.

While the Etruscans confined themselves to the use of bronze, and in fact became so skilful therein as to be able to construct entire vehicles of this material (*fig.* 3), the Greeks turned their attention to the precious metals. What at this period they were still able to accomplish in the use of the latter is clearly demonstrated by the late finds of silver ware at Hildesheim. We present a large bowl in Figure 19 (*pl.* 32) from this collection. The Republic, in order to check the growth of luxury, made laws regulating the quantity of silver plate which the citizens might possess; but even before its overthrow the taste for such articles had extended beyond all bounds, so that enormous prices were paid for choice specimens of Greek workmanship. Even as early as the reign of Augustus wealthy people furnished their kitchens with silver ware and their tables with gold. Under Tiberius it again became necessary to regulate by law the use of the latter precious metal. Vessels were even carved out of precious stones, such as agate, onyx, etc. Fabrications of glass, for which art Alexandria was especially distinguished, were not only highly prized in their own time, but have never been equalled since. The Romans also used alabaster, marble, and similar materials for their vases and articles of luxury. We have only to mention these articles in this History of Culture; their closer study belongs to the domain of antiquarian art.

Among articles whose use has passed out of existence, or which have been replaced by such as more fully serve the purposes for which they were intended, are to be mentioned earthen casks and the *amphoræ* (*fig.* 17), both occasionally of considerable dimensions, and each designed for the

preservation of wine. There were, besides, vessels, elegant pails (*pl.* 32, *fig.* 34) for carrying the wine from the cellar, and bowls (*figs.* 15, 16, 19) for mixing it with water, for, notwithstanding their debaucheries, the Romans drank wine in a diluted state only. Dippers (*fig.* 18) and samplers (*fig.* 22) are also to be mentioned. The drinking-cups (*fig.* 37) consisted of metal, glass, or precious stones; ivory, which has been so much in fashion since the Middle Ages, was rarely used. Kitchen utensils (*figs.* 21–30) were usually made of bronze. The art of tinning was also known. Since the ordinary fuel was charcoal, low trivet-shaped brasiers (*fig.* 27) or fire-basins (*figs.* 44, 45) of the same metal were in general use. A peculiar article, which never gained a foothold in the North, but is still in general use in Italy, is the tripod or three-legged table (*fig.* 41; *pl.* 33, *fig.* 4). Its use was by no means confined to the sacrifices. Even chairs (*pl.* 33, *fig.* 109) were often of metal, and in that case were covered with cushions. The candelabra, which were also of metal, held an important place and appear in the most varied forms, often with branches for several lamps. They were placed in those parts of the room where there was need of the greatest amount of light, inasmuch as the custom of all sitting around the table was much less general than it is with us. The graceful shapes of the lamps are shown in Figures 38 and 39 (*pl.* 32). As we have already stated in the paragraph on house-furnishing (p. 209), the Romans had no other means of increasing illumination than by multiplying the number of lamps.¹

In later times chairs were less used than couches, which, however, being of light and graceful construction, could be readily moved about. The dining-tables were low, because the Romans, like the Greeks, reclined at their meals, resting on the left arm and using the right hand only. The table was square, and was surrounded on three sides by upholstered couches (*lecti*), the fourth side being left free for the approach of the servants. Each couch accommodated three persons, so that nine persons could be laid at each table. If the guests exceeded that number, another *triclinium*, or dining-room, had to be arranged. In course of time round tables also came into use. At their banquets the Romans sought to please the eye and ear as well as the palate, and gifts were distributed as souvenirs.

The Toys and Games of the Roman children as well as those of adults were very similar to those of the Greeks. We find in the most remote regions graves of children containing clay figures, dolls with movable limbs, etc., such as we have already described (p. 131). The mission which brought such humanizing agencies, petty as they seem, to barbarous peoples should not be undervalued.

Music, Books, etc.—In earlier times, when musical instruments were used almost exclusively for military purposes, the Romans contented themselves with the trumpet and the horn. To these the flute was added for

¹ Candles of both wax and tallow were used by the Romans before the invention or introduction of lamps, and were entirely superseded by the latter only among the wealthier classes.—ED.

religious and social purposes. Eventually, they adopted every instrument which they found among foreign nations.

Books consisted of written rolls of parchment or some similar material, and were kept in cases or boxes (*pl.* 32, *fig.* 1); waxen tablets served for ordinary use, but important state documents were engraved on brass. Dies of this metal (*fig.* 20) for stamping or branding the owner's name have been found in large abundance. Chests and boxes were locked with very ingenious keys (*figs.* 12, 13); unfortunately, no locks are in existence, as they perished with the wooden boxes. Bathing utensils consisted of mirrors (*fig.* 3), wash-basins, ointment-boxes, and various kinds of flesh-scrappers (*fig.* 11) which were used instead of soap and sponge.

Domestic Life.—In entering upon the consideration of Roman life, domestic and public, we have first of all to realize the entire lack of similarity between the customs of social intercourse and that which elsewhere forms their basis and support. While in their social life the Romans followed the Greek model in all respects, and adopted as many customs as the highly receptive Latin nature could assimilate, yet in regard to domestic and civil intercourse they preserved their original characteristics until everything was finally overwhelmed by foreign influence.

However, we discover manifest contradictions connected with these ancient institutions which we find it difficult to explain if we turn our attention to natural development alone and disregard historical events and positive laws. The father had unlimited power over his family, and he alone decided whether the newborn child should be nurtured or be helplessly exposed; yet the mistress of the house enjoyed an importance and a dignity never found among the Greeks. The Roman state was based even more than that of Sparta on the patriotism of its citizens, yet it in no way concerned itself about their education. The women, although without any recognized political status, zealously nurtured every generous feeling of patriotism. A deep sense of religious feeling fitted well with the warlike spirit of the Romans.

Childhood.—We give on Plate 30 (*fig.* 1) a reproduction of an extant ancient fresco representing the birth of a child. The ceremony of bestowing the name took place in the case of boys on the ninth day after birth, and in that of girls on the eighth. It was performed at the domestic altar in the presence of friends, who gave presents of toys to the babe, while the parents supplied it with an amulet. In order to indicate his rank, the son of a noble was wrapped in a purple-bordered cloth (suggestive of the *toga prætexta*; see p. 204) as soon as his swaddling-cloths were removed. In his seventeenth year (in later times in his sixteenth) the youth left school and prepared for his entry into public life. On this occasion, which was also celebrated with domestic festivities, his colored toga was replaced by a simple white one. (See p. 216.) All the youths who celebrated this festival at the same time assembled in the Forum, and were thence led to the Capitol, there to make their first independent sacrifice. Figure 3 is a fresco from the Baths of Titus.

It represents several boys playing ball under the supervision of a tutor.

Education.—The schools of the Romans were like those of the Greeks, except that the latter people scarcely ever studied foreign languages, while among the former, especially in later times, the knowledge of the Greek language was considered an essential requisite for every educated man. In later times Greek became to Latin what French formerly was to the other languages of Europe. That women too were allowed the opportunity to participate in higher culture, and even to devote themselves to the fine arts, is proved, among other testimony, by a fresco from Pompeii (*pl.* 30, *fig.* 4), in which a female painter is represented.

Their only good educational institutions were those of jurisprudence. Students of other branches had to resort to the Greek schools. As late as the year 162 B. C. philosophers and rhetoricians were banished from Rome by a decree of the Senate. But eloquence was soon recognized as the readiest path to fame and honors, and its study was diligently pursued. The literature of Rome, though considerably inferior to that of Greece, attained such proportions that toward the end of the Republic the trade in manuscripts had already grown to be a profitable business.

Marriage.—The high position of the wife above alluded to proves that marriage was based upon mutual inclination. The state to a certain extent encouraged marriage, and it even imposed a special tax on bachelors. The result was that the Romans married earlier than the Greeks. Marriage had all the significance of a sacred institution, but was legal only among free citizens. There were three grades of matrimonial union, all of which were legal. The betrothal was the occasion of a feast at which the young couple exchanged presents. The wedding was celebrated among the better classes by solemn festivities which were intended to stamp the sacred act with its full importance. They sought, above all, by the study of omens and auspices, to avoid an unpropitious day. (See p. 218.)

The ceremony began with a sacrifice at which the bride consecrated to the Lares or domestic gods the toys which had rejoiced her childhood. Then, in presence of her female friends, she clad herself in her bridal costume (*fig.* 2). This consisted of a specially woven tunic, girdled with a woollen belt which was knotted in an antique manner. A net, veil, and shoes, all of golden color, belonged also to her costume. The hair was arranged in six curls, three on each side. The marriage ceremony was sometimes introduced by a pretended abduction of the bride, in accordance with an ancient custom. Accompanied by her spinning articles, she was led in festal procession to the gayly-decorated house of the groom, the doorposts of which she herself festooned with garlands and anointed with oil. The groom then carried her over the threshold, and presented to her articles symbolizing her dominion over the house; both then formally pledged their marriage vows, after which the priests blessed the union by sacrifices. A banquet and hymeneal hymns con-

cluded the ceremonies. On the morning following the bride made her first offering as mistress of the house, and thenceforward she wore the dress of a matron. Divorce could easily be obtained.

Domestic Service was always performed by slaves, who were generally captives taken in war. These slaves did not possess the right to marry, and children born to them were also kept in slavery. Many examples show us that the lot of the master's male servants was much better than that of the female servants of the mistress, for the Roman women were not distinguished for gentleness. Slaves also cultivated the soil. Under the Empire the wealthy prided themselves on their immense retinues of servants, and it often happened that shrewd domestics acquired great influence in the household. Slavery was nowhere else so cruel as among the Romans, and yet liberated slaves did more harm to the country than victorious barbarians. Negroes were preferred for certain posts, and even dwarfs and deformed servants were prized for their ill shapes. Stewards, scribes, artisans, teachers, etc. belonged to the higher grade of servants.

Food.—Up to the time of the Punic wars the master ate with the whole household, to which indeed the name *family* peculiarly belonged.¹ The food was in the highest degree simple, consisting principally of bran cakes and of vegetables; even bread was unknown. But in this particular also the Romans eagerly appropriated all that they became acquainted with among foreign nations, and during the Empire the kitchens of the wealthy surpassed the highest point which the culinary art had previously reached. Breakfast was taken toward noon, and the principal meal at about four o'clock. The latter meal, if complete, ordinarily consisted of three courses, between which the hands were washed. Before the diners reclined at the table their feet were bathed and anointed by slaves. Drinking-bouts were separated from meals, and conducted, not very successfully, in imitation of Greek manners. During the better times of Rome wreaths were not used at the banquets, being reserved exclusively as a reward of military merit.

Funeral Ceremonies.—The Romans associated so much pomp with their funerals, even in the earliest times, that the "Law of the Twelve Tables" had to interfere in the matter. The rivalry between the patricians and the plebeians, which grew out of the successful struggle of the latter for larger rights and the efforts of the former to maintain their superiority in external appearance at least, attained its most signal manifestation in this very display, which no law was able effectually to restrain. Ostentation found so many inventions to evade the laws, and exhibited itself in such manifold varieties, that we must content ourselves with a very general mention of them.

When the eyes of the deceased had been closed by some friend or relative, his name was called aloud, amidst the lamentations of all present.

¹ The word *familia*, applied originally only to the slaves, included not only all the members, but all the possessions of the household as the property of the *paterfamilias*. It was also used to denote the family as a portion of the *gens*, but rarely to designate simply the related members of a household.—ED.

As soon as the fact of his death was believed to be established, his body was placed in charge of the funeral director. After it had been washed, anointed, and dressed in suitable garments, it was laid out on a flower-bedecked bier in the atrium. A cypress was placed before the door, to indicate the presence of death; the hearth-fire was extinguished, and was not relighted until after the burial.

The funeral processions of the nobles were directed by a person specially appointed for the purpose, who was aided by lictors. They were led by funeral music, and by female mourners who sang songs in praise of the deceased. Mimes even were engaged, who recited passages from the tragic poets—an extreme which soon degenerated into a farce when the mimes performed burlesques while their leader imitated the appearance and manners of the deceased. The next place in the procession was occupied by waxen images of the family ancestors or by actors representing them. Immediately before the body were carried, on elevated frames covered with costly draperies, whatever civic honors the dead man had worn, such as wreaths of victory, pictures of conquered cities, spoils of the enemy, etc. They were borne by relatives, manumitted slaves, or, in the case of a person of distinguished merit, by an escort furnished by the state. The bier was followed by the relatives and by the public, all clad in dark clothes (*toga palla* or *sordida*), and finally by the newly-manumitted slaves, who as a badge of their new dignity wore on the head either a hat or a white woollen fillet. The procession moved first to the public rostrum, where a eulogy in praise of the deceased was delivered, and thence to the place of interment.

Cremation and Burial.—Near the place of sepulture, after the practice of cremation had come into vogue, the pyre was erected. The corpse was laid upon it, anointed with precious oils, and surrounded by testimonials of affection; then, amidst the lamentations of all, the nearest relative, averting his head, applied the torch. While it was burning, gladiatorial combats took place in honor of the deceased and for the entertainment of the spectators. This was a revival of an old practice, which without doubt bore a close relation to the custom of sacrificing to the dead. The ashes were gathered amidst invocations of the manes of the deceased, and with solemn rites were deposited in urns. Sprinkling with holy water purified those present. The urns were deposited in mausoleums built as grandly as means would permit, many of which may yet be seen located along the roads outside of Rome, Pompeii, and other cities. Infants were always buried, and no display was made at the funerals of boys and girls. Toward the end of the Empire burial in sarcophagi again became the universal custom. During the time of mourning the Romans abstained from public amusements, and even from frequenting the baths.

The Public Life of the Romans contrasted strongly with their strict family life, and possessed some features which claim our particular attention. During the Republic every citizen endeavored to gain a high, if possible the highest, position in the state. While the patricians strained

every nerve to confine official dignities to their own class, the people strove by every means to give personal merit the preference over inherited rank. The consulship was still open to merit, but not so the imperial throne. During the Empire lofty ambition was the more perilous in that the prize sought was the exclusive possession of a single man, and that often in the very moment of its attainment it brought destruction upon its pursuer. The contest for it often required the use of the worst men as instruments and helpers.

While the multitude were absorbed in the pursuit of riches and pleasure, the better citizens sought satisfaction in honorable leisure. They preferred a secluded country-life, and busied themselves entirely with the administration of their property. If they were obliged to adopt some profession, the law and other such vocations afforded the means of an honorable and independent subsistence. The study of philosophy and other sciences was universal. Family and social life among the higher classes attained an unprecedented development. The young Roman contested for public life clad in a white toga (*toga candida*), whence the word "candidate" is derived.

Although the public offices were systematically connected, yet they were not so graded and regulated that the candidate who successfully attained the lowest could look forward to secure preferment. Popular favor, which determined the highest honors, had then to be acquired in a manner not different from that of every other age. The term of office was usually but one year; to have once exercised its functions was of almost greater importance than to be enjoying actual possession, for the honor remained, and influence could be increased by successive terms only in exceptional instances. Direct compensation was awarded only to the inferior officials. The history of the Roman constitution is the history of Rome itself; its consideration lies outside our domain.

Judiciary.—The prætor was charged with the administration of the law, especially in civil matters. He was aided by a large number of judges, who were selected at first from the senators, afterward also from the knights, and who kept the knowledge of the rules and complicated forms of law-proceedings a secret among themselves. The Romans possessed the rudiments of our jury system, for there were judges who passed upon the facts of a case, and others who pronounced the verdict or sentence. Private offences could be prosecuted only by the aggrieved party, but any citizen might be the prosecutor in state offences. Grave crimes were tried by the Senate or by the *comitia* of the people. A citizen could be condemned to death only by the voice of the community, and even during the balloting he was allowed the alternative of voluntary exile. The condition of most of the provinces in regard to justice was for the most part lamentable.¹

Military Service.—All males, with the exception of the lowest class,

¹ This statement is far too sweeping, except in regard to certain periods. In general, the strict administration of justice was the strong point of the Roman dominion.—ED.

were subject to military service from the seventeenth to the forty-sixth year, and they could be freed from it during that period only after having participated in sixteen campaigns on foot or in ten as horsemen. Under the Republic, however, wars were so frequent that exemption was soon earned. Only veterans of ten campaigns were eligible to the magistracy. Led over a large portion of the world by military service, the Roman must have unconsciously acquired a wide amount of observation, and its general extension could not but raise the capacity for intellectual culture. Nevertheless, the practical tendencies of the people remained predominant.

Agriculture, Trade, and Commerce.—The products of the soil furnished the means of subsistence. By the Claudian law the patricians were forbidden to engage in mercantile pursuits; they were only permitted to advance money for the enterprises of others. Nevertheless, the Roman navy protected the commerce of subjugated nations.

Religion.—The practical sense of the Romans was especially apparent in their religion. In the Greek view the gods, though placed above man, were yet his companions in a beneficent scheme of existence as well as subjects for the exercise of his imaginative faculty; to the Roman his gods were alien powers, whom he acknowledged as such because he conceived of man also primarily as a power, and whose favor he wished to gain because he needed their assistance. He was deeply religious because his sense of dependence was great; but the main element of his character was his decisive will. Without imagining that belief in supernatural powers could render him independent of external circumstances, he accepted it in order to gain his definite ends. Therefore he concerned himself only about the substance; the forms were indifferent, and he freely borrowed them from others when he himself was unable to create them.

Mythology and Superstition.—The old Latin mythology is an object of purely antiquarian research.¹ Even as early as the times of the kings the Greek Olympus began to migrate into Latium and to transform itself into a system devoid of myths. Except the double-faced Janus (who was only too frequently a mere allegory), the Romans can scarcely show a national deity. But they adopted the gods of other countries besides Greece, and their tendency to do so continually became stronger. Sometimes when besieging a city they venerated its gods in order to win them for allies. They were prone to find divine interposition in every chance

¹ The old Roman religion can hardly be said to have had a mythology in the Greek sense. But, though narrow in spirit and prosaic in form, it had a deeper ethical significance, and consequently a stronger hold upon the conscience and a higher practical value, than that of any other ancient people except the Jews. It was bound up with the conceptions of law, with the existence as a collective unit of the family, and with that of the state as an aggregate of families. Jupiter (Jovis Pater) was the supreme father, the highest—originally, perhaps, the sole—object of worship. The same idea was typified in the devout adoration of the Lares and the Penates—the household gods of the family and the state—and in the blazing hearth of the community, watched over by the Vestal Virgins. This simple, pure, and exacting system reflects the Roman character in its primitive and ideal aspects. Early additions of native origin have no such essential significance; those of successive later periods represent the gradual transformation of ideas and institutions coinciding with the extension of intercourse and dominion, down to the ultimate absorption of Rome by the nations it had conquered and ruled.—ED.

occurrence, and superstition perhaps nowhere played a greater part than among them. Their most important enterprises were made dependent upon the flight of birds, the feeding of chickens, and similar auguries. Even during the period of their highest culture they made no attempt to free themselves from such superstitions.

Priesthood.—In public affairs, which were closely connected with religion, the Roman priests occupied a far different position from those of Greece, although here too they were neither an hereditary caste nor a distinct class. Their office was a public position, which was to be obtained like other public employments or which was legally associated with some of the higher magistracies. Only a few priests, such as the augurs and flamens, held office for life. The supervision of the entire worship was exercised by the pontiffs under the supremacy of their superior, the pontifex maximus, who always occupied an influential position. It was the duty of the augurs to observe the flight of birds, the feeding of the sacred chickens, and the occurrence of thunder and lightning, from all of which the result of any important state affair was predicted.

The haruspices prophesied from the entrails of the sacrificial victims, from smoke and flame, as well as from accidental occurrences. In special cases application was made to foreign oracles, particularly to those of Greece. The flamens were priests serving individual gods, whose names they bore. The highest in rank, the priest of Jove, or *Flamen Dialis*, had a lictor in his suite and enjoyed great authority, but he was subject to very peculiar restrictions. He was not allowed to mount a horse, to stay overnight outside the city, to swear an oath, to be with an army, or to witness the business of daily life. He could not be divorced from his wife, and when she died he had to resign his office. The Vestal Virgins, who were at first four and afterward six in number, had charge of the sacred fire. They enjoyed high reputation, and were held to the strictest chastity, for violation of which they were severely punished.¹ They were at liberty to resign their office after thirty years of service.

Sacrifices and Festivals.—The sacrifices of the Romans were similar to those of the Greeks. They were divided into such as had for their object supplication, propitiation, and thanksgiving, or, with regard to the person sacrificing, into public and family sacrifices, or, as regards the time, into occasional and annual. The most magnificent offerings (*pl.* 30, *fig.* 8) were made after a successful campaign, and they often formed part of the triumphal procession of the victorious general. Some families were obliged to make private offerings each year to certain deities, and the priests, though their intervention was not necessary at such rites, watched over the celebration of them.

The participation of the priests was required at the public festivals with which the Roman calendar was well provided. We mention only the Saturnalia, from which some of our Christmas festivities have sprung.

¹ This expression is hardly strong enough, since the vestal virgin who violated her vow of chastity was first scourged and then buried alive in a subterranean cell.—ED.

They were of a joyous character and celebrated the recurrence of the winter solstice. In the beginning they occupied but a single day in the month of December, but later on their celebration was extended over several days. During their continuance the Senate, courts, and schools were closed, no criminal could be punished, slaves were granted a holiday and allowed many liberties, friends interchanged gifts, and fairs were held in the public squares.

Entertainments: Public Games.—The public games had a religious origin. Romulus is said to have instituted them, but Tarquinius Priscus made them permanent by founding the Circus Maximus, from which all the later games received the name circus. Though probably derived from the Etruscans, they were in fact an imitation of the national games of the Greeks. In course of time they underwent a change which indeed more than anything else shows the difference between the Roman and the Greek character. The earliest games were called the *ludi Romani*; they were no doubt a city celebration associated with religious ceremonies. Besides other similar ones, a festival of the plebeians (*ludi plebei*) is referred to. Eventually, games were added expressly in honor of the gods. We have already spoken (p. 215) of funeral games. Finally, wealthy individuals arranged games and shows to amuse the populace and to gain its favor. The popular taste for these entertainments increased as they lost their original character, and at last became a ruling passion. Under the Empire they served as the best means to distract the degenerate populace from public affairs, but while these entertainments effected that purpose they still further debased the people.

The care of the public games originally belonged to the consuls, and later on to the ædiles, who also had charge of the markets and of traffic in general. The expenses were defrayed from the public treasury; but the ædiles, finding that their importance and repute were increased by the brilliancy of the shows, contributed also from their own funds. Custom in time made an obligation of this voluntary gift, and the tax at last grew so heavy that no one was willing to accept the ædileship. The emperors had accordingly to distribute the burden among other officials, but took upon themselves the greatest part of the expense. The games themselves, at first very simple, bore from the beginning a military character. They consisted principally of boxing and horse- and chariot-races. But the popular taste was too coarse to be satisfied with feats of strength or sham battles.

It has been remarked with some truth that a taste of the wolf's milk which nourished its founders runs through the entire history of Rome. Combats between professional gladiators were first introduced at the funeral of Junius Brutus (264 B.C.), but they had been customary before that time in other parts of Italy. These gradually replaced the sham fights, and offered, what the people above all wanted, the sight of blood. Further to indulge this sanguinary taste, combats of wild beasts were introduced, for which the fiercest animals were imported from Asia

and Africa. To render the spectacles more exciting, slaves and criminals were pitted against the beasts, and under the emperors, as is notorious, Christians were subjected to the same cruelty. But the gladiators were not to be outdone; they too hired themselves out for deadly combats (*pl.* 30, *fig.* 6). They fought in pairs or in bodies, heavily or lightly armed, mounted on horses or seated in chariots, for these demoralizing amusements were reduced to a regular system. The consul (*pl.* 29, *fig.* 14) gave the sign to begin by waving a white kerchief. The person who held the games decided whether the vanquished combatant should be spared or put to death. Gradually that privilege passed to the people, who decreed death to the defeated gladiator by turning down their thumbs, or mercy by waving their kerchiefs.¹

It may be here mentioned that the Romans, in feeble imitation of the Greeks, also made attempts to introduce musical contests, and, notwithstanding the essential inanity of these performances, persisted in retaining them a long time. Scenic games were peculiar to their civilization, but these too were soon shaped after Greek models. They appear to have originated in the peasant-dances and burlesques which were performed in connection with the early martial games.

Mimetic exhibitions, which perhaps had always been common with the people, just as the genius of the Italians to this day shows a remarkable skill in mimicry, took the place of other representations; with the increasing numbers of the audiences the subjects of these exhibitions attained greater unity and compass. But the development of the Roman drama belongs to the history of literature.

Theatres.—In the beginning there was no fixed place for the various games. As occasion arose, a space was cleared and seats arranged in the market-square or on any open ground, though the Circus Maximus was chiefly used. Cæsar built the first permanent amphitheatre of wood. Enlarged, burnt down, rebuilt, it finally became the Colosseum, whose immense ruins are still the admiration of the world.² Soon every important city had its amphitheatre, though on a smaller scale. On Plate 31 we present a section of the amphitheatre of Pompeii (*fig.* 11); one can easily recognize the seats arranged in ascending tiers, the entrance for the gladiators in the centre, the barrier separating the spectators from the arena, and (in the section of the wall) the cage for the wild animals. The theatre was developed in a similar manner. Each individual brought his

¹ To press the thumb close (*pollicem premere*) was a sign of approval; to extend it (*vertere*) of disapprobation. Hence in the gladiatorial shows the former was the signal for sparing, the latter for killing the defeated combatant. The distinction was not strictly between the upward and the downward motion of the thumb; still less did the upward turn which the thumb would naturally make when extended indicate, as is commonly supposed, a merciful intention. Waving the handkerchief had no significance.—Ed.

² It is incorrect to speak of the wooden amphitheatres erected by Cæsar and some of his successors as permanent or intended to be so. The Flavian Amphitheatre—which is supposed to have received the name by which it is commonly known from its proximity to the colossal statue of Nero—was built at a later period, having been planned and begun by Vespasian and completed by Titus and Domitian.—Ed.

own chair, even in the time when spaces were still set apart for the different classes of society. The belief that scenic plays were enervating prevented for a long time the erection of a permanent theatre. Finally, Pompey erected the first theatre of stone, in 55 B. C. The chorus never became developed in the Roman drama; the orchestra was reserved for seats for the senators; but in other essentials the arrangement remained the usual one.

In technical matters the Romans soon surpassed the Greeks. Our illustrations (*pl.* 30, *fig.* 5) show several actors with their masks; the stage of the theatre of Herculaneum, reconstructed from its ruins, is shown on Plate 31 (*fig.* 12). Professional actors arose at an early period, and united themselves into companies under the management of a director. Consisting as they did exclusively of freedmen and slaves, they enjoyed no social position whatever down to the time of the emperors, though they frequently received high compensation. The thirst for applause and the nuisance of noise or of hired *claqueurs* were as fully developed as in our day. Men alone were the performers among the Romans as well as among the Greeks; but in the mimes and pantomimes (which reached a high degree of development in Rome) women also took part. The greatest splendor was introduced in the decoration of the theatre and in the setting of the play. The Romans employed apparatus to imitate thunder and to produce other illusions, while the Greeks had nothing of the kind, and such accessories would probably have appeared unnecessary to them.

Baths.—Besides the theatres, the public baths are to be mentioned as places of recreation and pleasure. They originated during the Empire, and were fitted out with a splendor probably unsurpassed by any other public institution. Their size is evident from their ruins, and their magnificence has been the theme of more than one ancient writer. They not only contained baths of various kinds, but also gymnasiums after the Greek fashion, libraries, collections of works of art, porticos, parks, etc. The Baths of Caracalla could accommodate twenty-three hundred persons at one time. There were in the city of Rome alone, up to the time of Constantine, ten such institutions. Bathing-resorts or watering-places, as we understand the term—that is, at choice spots along the sea-coast—were also much in vogue. Baiae, for example, was a famous one.

Aqueducts.—The Romans surpassed all other nations, ancient and modern, in the construction of aqueducts, which were among the grandest and most enduring of their works. They were compelled to construct those which supplied the capital by reason of the scarcity of springs in the neighborhood of the city and the impurity of the water obtained from the Tiber. What Pliny says of the Claudian aqueduct is true of all: "If any one will carefully calculate the quantity of the public supply of water for baths, reservoirs, houses, trenches, gardens, and suburban villas, and the arches built, the mountains perforated, and the valleys elevated along the distance which it traverses, he will confess that there

never was anything more wonderful in the whole world." Some remains of these great structures, which extended in more than one direction many miles across the Campagna, are still among the most striking of ancient ruins.

A treatise, *De Aquæductibus Urbis Romæ*, which is extant, was written by Sextus Julius Frontinus (*curator aquarum* about 100 A. D., under Nerva and Trajan). From this it appears that the date of the first important enterprise of the kind (*Aqua Appia*) was 313 B. C. Frontinus refers to nine different aqueducts, which were all that existed in his time, and which daily brought into the city twenty-eight million cubic feet of water. The abundant supply which modern Rome derives from the three now in use enables us to form an adequate conception of the vast scale on which the ancient city must have been provided with one of the most important appliances of civilization and refinement, when nine were employed to feed its baths and fountains.

According to some authorities, the number of aqueducts was afterward increased to nineteen; others make it twenty-four, probably including branches or channels of which we possess no accurate information. Considering the population to be supplied, the combined capacity of all these works was very great. It has been estimated that not less than fifty million cubic feet of water were brought daily to a population which probably did not exceed one million.

The Romans also constructed aqueducts in different parts of their extended domain outside of Italy. Some of these surpassed in grandeur those which furnished water to the capital. The aqueduct at Metz, the ruins of which still remain, was among the most remarkable. It originally extended across the Moselle, and conveyed to the city a supply of excellent water from the river Gorze so abundant that from it were filled basins sufficiently large to accommodate mock naval battles.

Conclusion.—The Romans were the last of the nations of antiquity to enter upon a career of civilization. They were the recipients of the early culture of the East, of Egypt, of Etruria, of Carthage, of Palestine, and, above all, of Greece. The Roman empire, by bringing many different nations into peaceful and intimate relations, was the means of concentrating, preserving, and diffusing their knowledge and ideas and the results of their varied activity. The special contribution made by Rome herself to the cause of civilization was her system of law, which, from a few simple and narrow regulations, the framework of her primitive organization, was gradually developed into a vast and elaborate code, founded on universal and immutable principles, and applicable to society in highly-advanced and complex conditions. It is everywhere either the basis or one of the main constituents of modern jurisprudence, and it thus remains the most enduring monument of the greatness of the Roman people.

X. THE BYZANTINES, NEO-PERSIANS, AND SCYTHIANS.

THE life of the Byzantines was a reflection of that of Rome. For, though the Eastern division of the Roman empire survived by a thousand years the overthrow of the Western, it can hardly be said to have developed a special or distinctive culture. The newly-founded empire of Constantine possesses the undeniable merit of having restrained the hordes of Asia, which were eagerly pushing forward, until the West had grown strong enough to defend itself. But that is a fact which belongs to history proper, and not to the History of Culture. It possessed, indeed, sufficient vitality to furnish to the Slavonic states which gradually sprang up in its vicinity a form of national development not undeserving of the name of culture, but one that has had no influence upon the great march of human civilization. The Byzantines, indeed, preserved many traditions of classic antiquity which had become extinct in Rome itself, and imparted them to Western Europe when the latter had ripened into capacity to utilize them, and so served the purpose of an important mediatorship; but it added little of its own to them. And what it did impart was, as we shall note, not so valuable as men have been inclined to esteem it.

Decline of the Empire.—The removal of the capital from Rome to Constantinople was perhaps justifiable as a political measure, but it gave a death-blow to all that was essentially Roman in character. Asiatic influence, which had already made itself felt, became predominant. The Semitic life stifled the Indo-Germanic, and to this process Christianity lent only its name. The introduction of Christianity, which had existed in its true form in the Catacombs, was, in fact, but the popularization of the old schools of philosophy, in which, instead of the Neo-Platonic and other doctrines, so-called "Christian dogmas" were taught. The subject alone was changed; the mode of treatment remained one-sided and rationalistic as before.

Paganism, which had not been wholly expelled from the popular mind, enjoyed once more, before its final extirpation, the triumph of looking down with pity and scorn upon the new religion of the state. The combats of gladiators and of wild beasts were indeed abolished, but the taste for them remained. The partisans of the Circus and the Church butchered one another as ferociously as had the former gladiators, so that the pagan Ammianus could say with truth that the Christians had never been attacked by wild beasts as fiercely as by their fellow-Christians.

The priesthood established by Constantine began almost from the moment of its creation to struggle for supremacy in the state; and if the

contest which was then brought about was less significant than the corresponding one in the West, it was because in the East interests alone were at stake, and principles were no longer concerned.

The ensuing decline was not at once perceptible. The Byzantines continued yet to develop a special style of architecture, though it was almost entirely confined to their own country, and their plastic art and painting only gradually lost their noble Greek forms in that stiffness which we specifically term "the Byzantine style." Noteworthy phenomena present themselves also in other fields of intellectual achievement, but, on the whole, active and creative life was extinct.

Dress.—Naturally, costume must have undergone many changes during the long period of a thousand years. A glance at it will suffice us, so that we may learn the final stage of development of the Roman dress. Plate 34 exhibits the court-attire of the sixth century A. D. The cloak fastened on the right shoulder predominates. On the emperor (*fig. 1*) and the chief courtiers (*fig. 2*) it resembles a long gown. The undergarment is a girded tunic with long, closely-fitting sleeves. The guards (*fig. 3*) wear tight trousers which extend to the feet and are sewed to soles that cover the heels and toes. For greater freedom of movement they wear a short-sleeved upper-garment like the tunic, except that it is not girded. The cloaks of the officials are marked with the *clavus*, a square piece of purple cloth which served as a mark of rank.

The mosaic in the basilica of San Vitale at Ravenna, from which our illustration is copied, exhibits the colors of the garments. The emperor's mantle is purple worked with gold, the *clavus* is decorated with figures of birds, the white under-garment is trimmed with gold, and the purple shoes are ornamented with pearls. His golden diadem, edged with precious stones, has been elevated to a crown. The mantle is held by a clasp of which we represent enlarged specimens on Plate 33 (*figs. 46-48, 84*). It is worthy of note that the emperor and one of his companions wear moustaches. This custom was unknown to the ancient Romans, and indicates the growth of barbarian influence, either Tartaric or Slavonic. The tunics of the officials and the cloaks of the figures near the emperor are white, while the cloak of the third figure, indicative of lower rank, is green. One of the guards (*pl. 34, fig. 3*) bears on his shield the monogram of Christ, formed out of the Greek letters *X* (*ch*) and *P* (*r*).

Opposite to the emperor, Justinian I., stands his spouse, the infamous Theodora (*fig. 4*), also clad in a white gold-embroidered lower garment decorated with precious stones, and a mantle of the same material as that of the emperor, with a broad edging marked with figures. Her shoes are red, with gold trimmings. Her purple diadem is decorated with pearls, stones, and pendants, and elevated like a crown. Both she and the emperor bear offerings, probably relics, for the church in which the mosaic exists. In accordance with Asiatic etiquette, which prevailed at the Byzantine court, and which permitted little movement of the hands, the companions of Theodora (*fig. 5*) are clad in sack-like upper

garments closed all around. It may be inferred that the materials of which these as well as the under-garments consisted were costly and richly embroidered.

As we have already indicated, Byzantine culture spread northward beyond the limits of the empire, and exercised a lasting influence upon the newly-established Slavonic states. Figures 6 and 7 (*pl.* 34), copied from ancient paintings, exhibit the attire of two noblewomen belonging to those states, which, though of a much later period than the above-mentioned mosaic from the church at Ravenna, bears a decided resemblance to the Byzantine costume. In being buttoned at the breast the cloak had indeed undergone an important change. But the stripe down the front, which was of a different color from the dress and was decorated with embroideries in the form of precious stones, occurs very frequently in the Byzantine female attire of the later period.

The head-kerchief and the wrap about the neck in Figure 6, likewise of Byzantine origin, still formed part of the secular dress; they have been retained even in our day as part of the habit of nuns. The diadem had completely developed into a crown, but it is not yet to be regarded as the emblem of authority. Even to this day, as is well known, it forms part of the Russian national costume, though it is made of inferior material. The hair-arrangement of Figure 7 resembles that of the court ladies of the above-mentioned mosaic.

A great length of time must have elapsed between the ancient Russian costume in Figure 8 and its Byzantine original. Yet the connection is undeniable. The cloak is present, though in later times it was discarded; the tunic has been converted into a closely-fitting jacket trimmed about the hips with a leather belt and metal splints like a coat of mail, but it shows its origin sufficiently by the decorated stripes on the upper arm. The trousers and half-boots are also Byzantine, though they have lost their antique elegance. But the fur-trimmed cap is distinctively national.

The Neo-Persians.—It remains for us to cast a retrospective glance upon the Neo-Persians, a people who played a mediatorial rôle in the development of the West similar to that of the Byzantines: the influence of the former was more indirect, it is true, than that of the latter, but not much less potent; for the Arabs borrowed the essential characteristics of their widely-extended civilization from this nation.

Civilization.—The Parthians under Arsaces had overthrown the empire of the Seleucidæ: in the year 226 A. D. the descendants of that conqueror were compelled to vacate the throne in favor of Artahshatr or Ardshir Babegan, who under the name of Artaxerxes undertook to restore the ancient empire and religion of the Persians. Notwithstanding these manifold vicissitudes and the hostile opposition of the Sassanides, the race of the Neo-Persian rulers, Greek civilization, which had taken such firm root in the before-mentioned countries of Western Asia, maintained

its supremacy for a long time, and yielded but slowly to unfriendly influences.

Becoming, however, more and more formal, it gradually gave way to the pressure of Mohammedanism, but not without leaving traces of itself, especially in Persia, which the wild conquerors themselves developed with a considerable degree of success. At the same time, important elements of old Asiatic civilization, of which we found evidences in Assyria, Babylonia, and even Persia, were carried over into the Middle Ages, and exercised, through the Crusades and the intercourse of the Arabians with the people of the West, an influence which affected the subsequent development of all the modern nations of Europe.

We must content ourselves with the bare statement, and can only call to mind how Chosroës I. (Anushirwan, "the Just") founded an empire whose extent was little less than that of the colossal kingdom of the ancient Persians, and in which, through military prowess and executive ability, a state of prosperity arose in the highest degree noteworthy; and how his grandson, Chosroës II. (Eberwiz), carried his victorious arms as far as Constantinople on the one side and to the borders of Ethiopia on the other.

Costume.—Plate 28 presents illustrations of two of the Sassanide kings (*figs.* 18, 19), taken from a bas-relief made of silver and plated with gold preserved in the Hermitage of St. Petersburg. The names of the kings represented are engraved in the Pehlevi character, which is not yet sufficiently understood to enable us to decipher them. The rather gay costume there shown has departed widely from the Old Persian. It is difficult to determine the elements out of which it was developed, and to which no doubt many nationalities entirely unknown to history contributed. After the migration of the Aryans, whose original habitation was Central Asia,¹ and who began to spread over Europe two thousand years before the commencement of our era, Tartaric and other tribes, coming probably from the North-east, poured into the ancient abodes of the former and pushed farther southward and westward.

Technical Skill.—The best-known contribution of the Neo-Persians to modern Europe is the game of chess. Extant specimens of workmanship in the precious metals, like the relief above mentioned, also silks of peculiar patterns, give evidence of the industrial skill of the people, the products of which supplied the most distant countries. Such silks, the manufacture of which was adopted by the Arabs, remained models for imitation, and for a long time gave the fashion to the Christian countries of the West. Indeed, the technical skill of the Neo-Persians was transplanted by the Arabs through Sicily and Spain into northern countries, where the weaving of artistic fabrics thus became naturalized.

¹ A favorite theory, with German scholars especially, at the present day assigns to the Aryan race the shores of the Baltic as its "original dwelling-place." What is meant by the "origin" or the "birthplace" of one of the great primal families of the human race has not been explained by the advocates of either theory.—ED.

Ceramic Art.—The same is true of the art of pottery, the remains of which, on account of the frailty of the material, can scarcely be attributed to so remote a period as that of the Sassanides, but which, at all events, belong to Arabic antiquities (*pl.* 28, *figs.* 20–24). This art, which included glazing and enamelling, together with the production of majolica ware, reached us by the same route.

The Scythians.—Before proceeding to the consideration of the nations of modern history we will devote a few words to one other nation, which, although it did not succeed in developing a proper civilization of its own, stood in such intimate relation to that of the most remote antiquity, as well as to the culture of modern times, that we cannot entirely overlook it. The people to whom we refer are the Scythians, of whom Homer already had an imperfect knowledge.

Origin.—They were believed by Herodotus to be of Asiatic origin; and his account of them, taken in connection with the description given by Hippocrates of their physical peculiarities, has led to the belief that they were a part of the great Mongolian race which has wandered from unknown antiquity over the steppes of Central Asia. Another view assigns them to the Iranian branch of the Aryans. (See Vol. I. p. 385.) Herodotus says that they were driven out of their abodes in Asia, north of the Araxes (Aras), by the Massagetæ, and that, migrating into Europe, they drove out the Cimmerians. If this be true, it may account for the irruption of the Cimmerians into Asia Minor in the reign of the Lydian king Ardys, about 640 B. C.

National Life.—Herodotus refers pretty clearly to the steppes of Southern Russia as the abode of this people. He mentions, it is true, not a few names of the tribes inhabiting those regions, which have but little meaning for us, as traces of them can no longer be found. They were probably simply separate divisions of warlike hordes belonging to a single tribe nomadically wandering over those boundless plains. Æschylus agrees with later writers when he describes the Scythians as dwelling in wicker-work huts on wagons and as constantly carrying the bow and arrow. They were a nomad people who roamed over a vast tract of country at their pleasure and according to the wants of their flocks and herds. They kept large troops of horses, and were expert in cavalry exercises and archery; it was almost impossible for an invading army to act against them. They simply retreated, wagons and all, before the enemy, harassing him with their light cavalry, and leaving famine and exposure, on their bare steppes, to do the rest. They were divided into several hordes, the chief of whom were called the Royal Scythians, and to these all the rest owed some degree of allegiance. Their government was a sort of patriarchal chieftainship. An important modification of their habits had, however, taken place, to a certain extent, before Herodotus described them. The fertility of the plain on the north of the Euxine, and the influence of Greek settlements at the mouth of the Borysthenes (Dnieper)

and along the coast, had led the inhabitants of this part of Scythia to settle down as cultivators of the soil. As early as the seventh century B. C. the Greeks had had mercantile relations with them and had founded colonies on the shores of the Black Sea. In consequence of the stimulus given by the latter, a sense of higher culture had been awakened among this barbarous people.

Excavations made in Southern Russia have brought to light graves of barbaric kings which contain costly articles evidently the work of Greek hands. The golden vase (*pl.* 22, *fig.* 71) before mentioned, upon which are represented scenes taken from the life of this nation, was found in one of these graves. These masterpieces of illustration perfectly agree with the descriptions of the habits of this people left us by ancient writers. The group shown in Figure 13 (*pl.* 34) is taken from the engravings upon the vase. A glance suffices to convince us that we are dealing with the ancestors of the nations at this day inhabiting that country—the Cossacks and other peoples of the Ukraine.



1. Pharaoh. 2. Queen. 3. Priestess. 4. Priest. 5. Courtier. 6. Fan-bearer. 7. Judge. 8. Body-guard. 9. Ethiopian near Egypt.



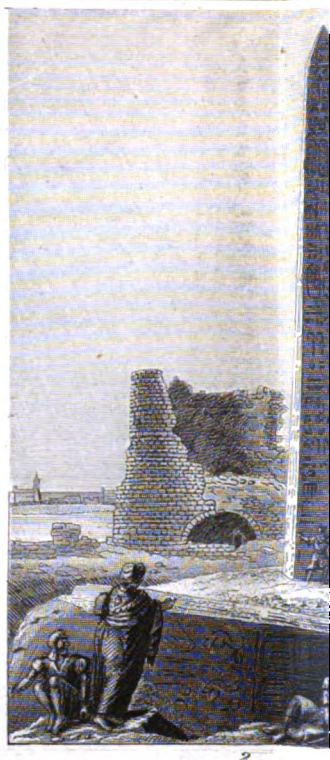
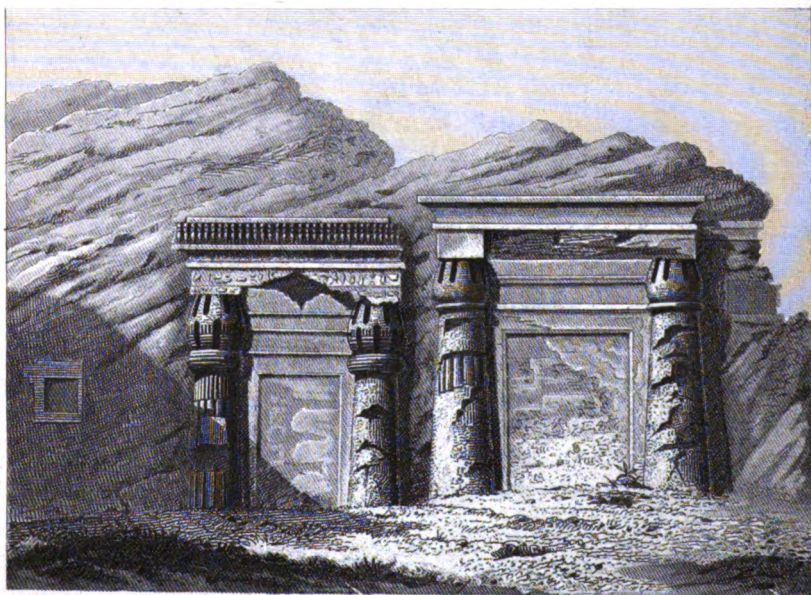
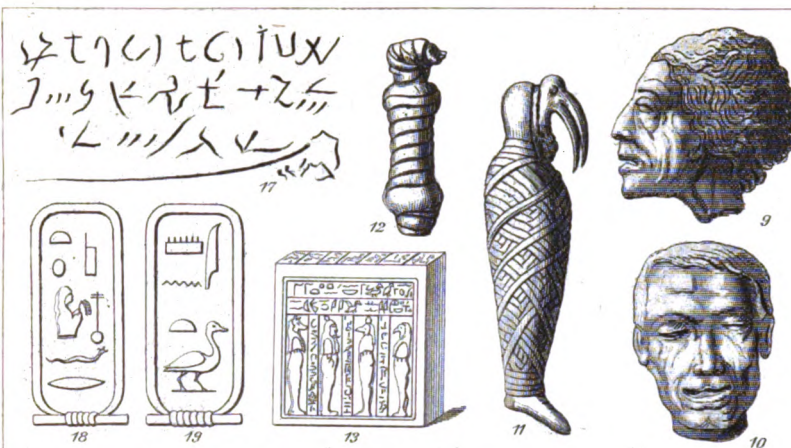
ian queen. 10. Egyptian noble. 11, 12. Egyptian national costumes. 13, 14. Modern Numidians. 15-17. Races living



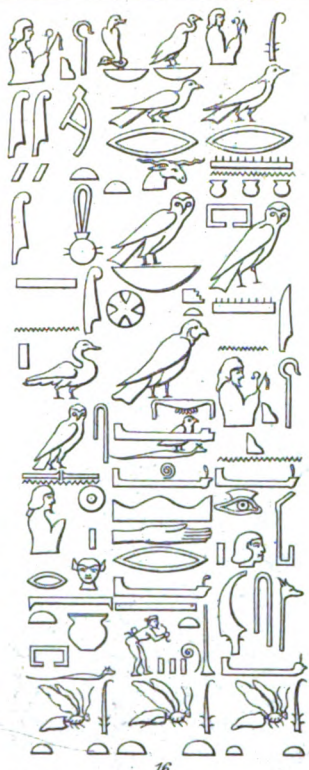
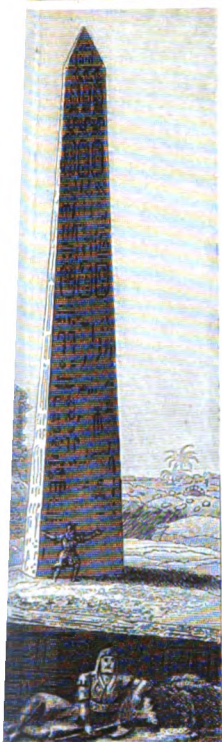
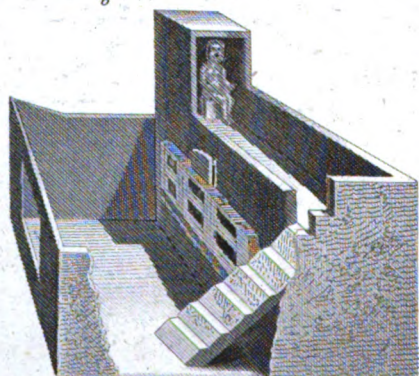
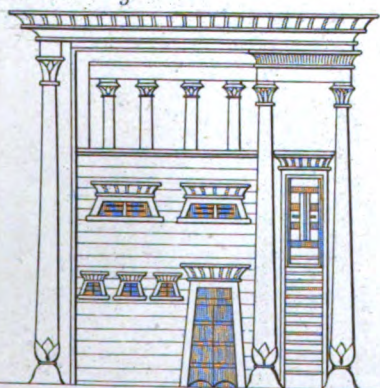
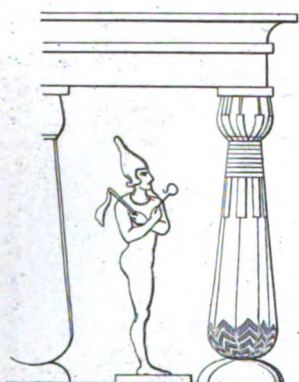
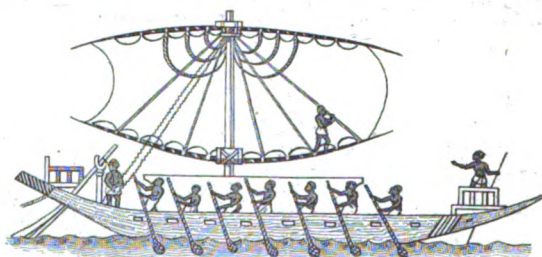
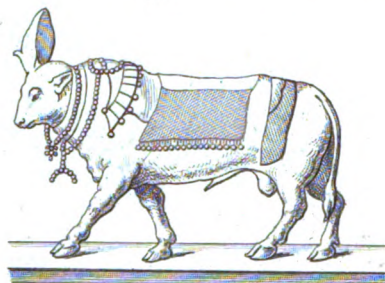
1-10. Insignia of royalty: 1-3, Head-dresses; 4, head-dress of royal youth; 5, cap of Lower Egypt; 6, diadem, ornament in public religious worship; 13, Processional-boat of the gods; 14, 15, 17, 18, various utensils; 16, censer; 19, offering; 20-21, Collar. 32. Necklace. 33. Necklace with pendants. 34-39. Articles of jewelry. 40-44. Amulets. 45. Sistrum. 46, 47. Various forms of vessels. 82. Large vase. 84-90. Cooking utensils and table-ware. 91. Hanging lamp. 92-96. Toilet accessories. 104. Whip. 105. Harness. 106. Sedan chair. 107. Plan of an ancient Egyptian house.



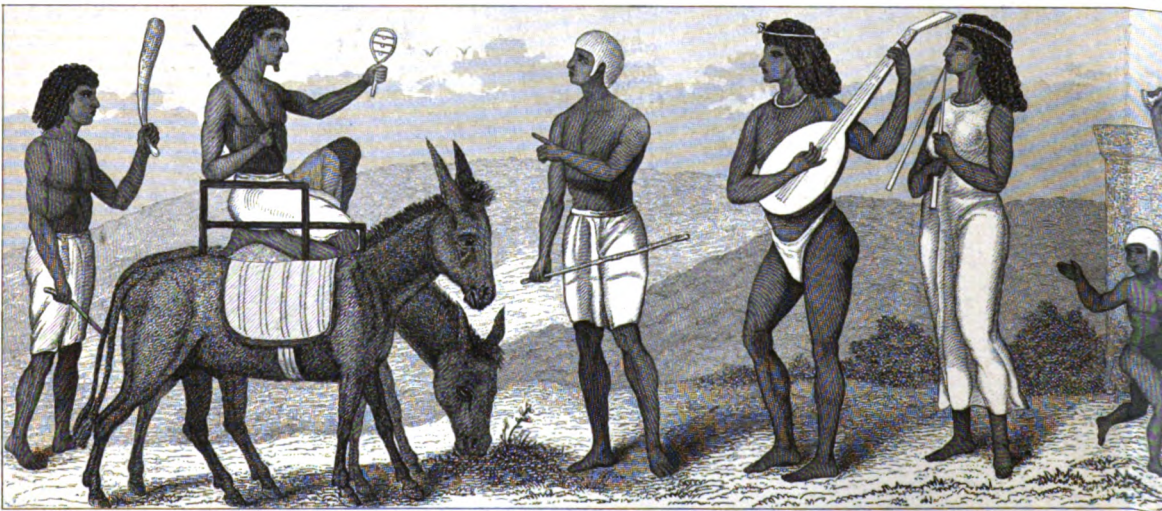
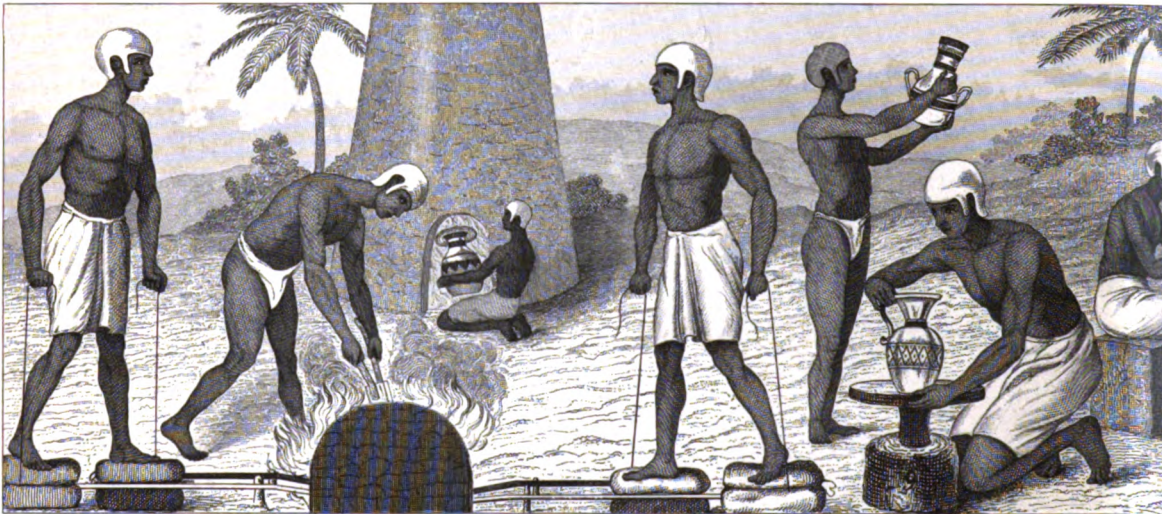
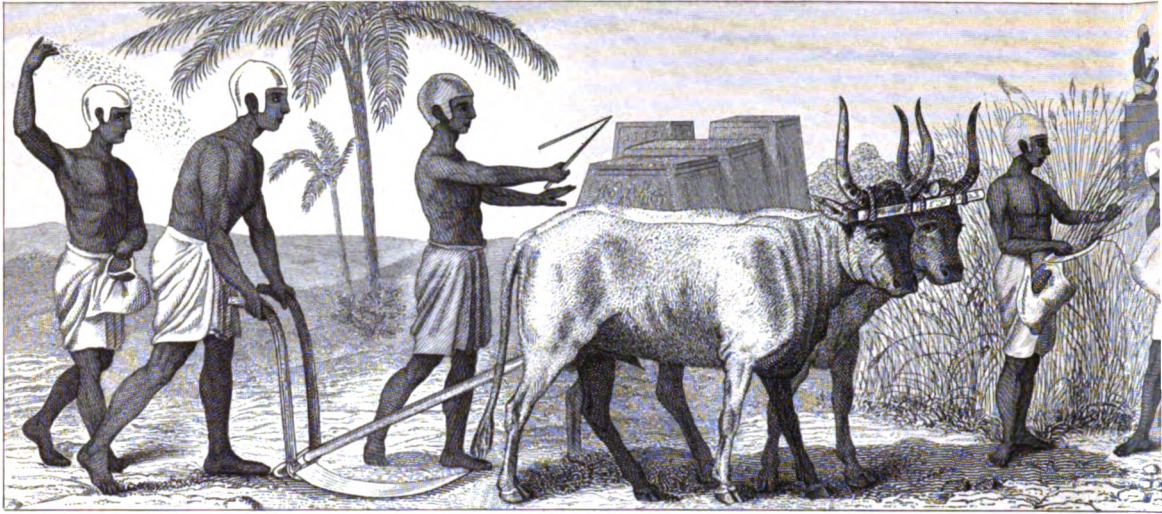
represented with the "uraeus;" 7, whip; 8, shepherd's crook; 9, 10, sceptres. 11, 12. Insignia of courtiers. 13-22. Articles used
 20-22, standards. 23. Mummy-bier. 24. Harp. 25. Lute. 26. Castanets. 27. Lyre. 28, 29. Flutes. 30. Drum. 31.
 47. Seals. 48, 49. Sandals. 50. Head-rest. 51-66. Tools. 67. Scales. 68, 69. Scale-weights. 70. Palette. 71-81, 83.
 accessories. 97. Hand mirror. 98. Couch. 99. Table. 100. Seat. 101. Ornamented chair. 102. Footstool. 103. Chariot.



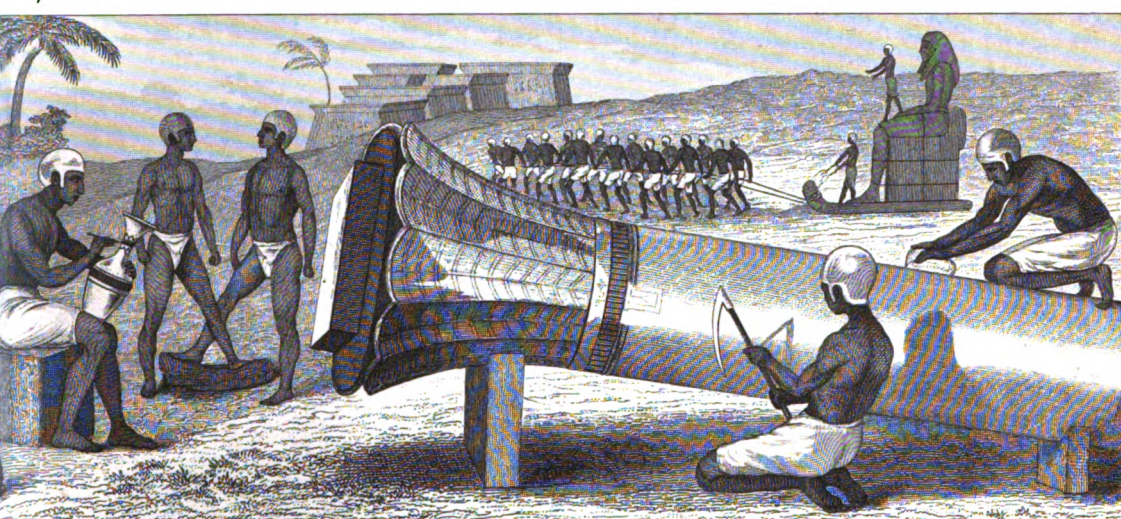
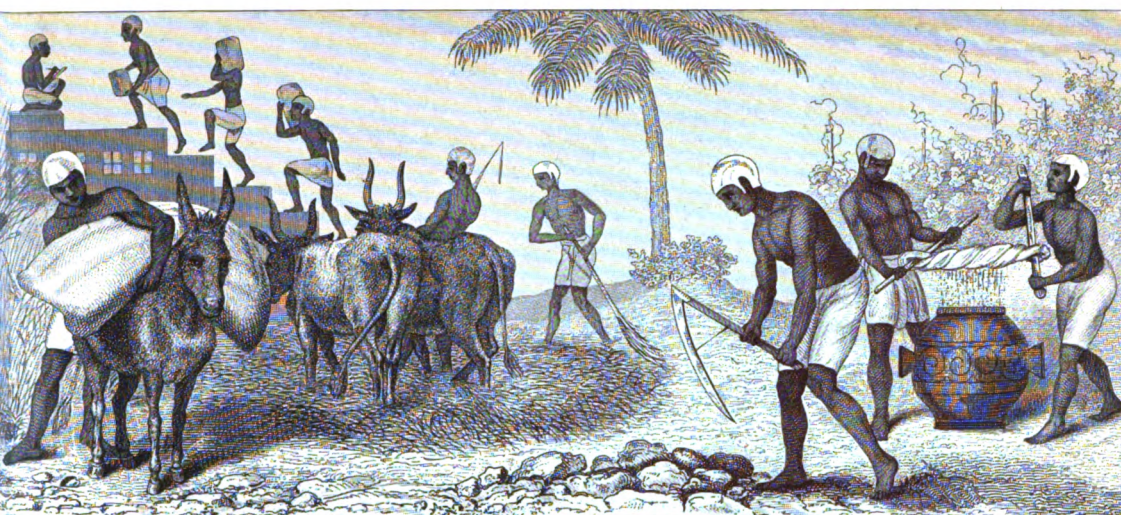
1. Interior of the Great Pyramid of Cheops. 2. Cleopatra's Needle. 3. Model of an ancient Egyptian house. 4. Façade near Gizeh. 9, 10. Mummy heads. 11, 12. Mummies of sacred animals. 13. Casket for containing the sepulchral urns. 14. Rings, inscribed with a king's name in hieroglyphs. 20. Astronomical table.

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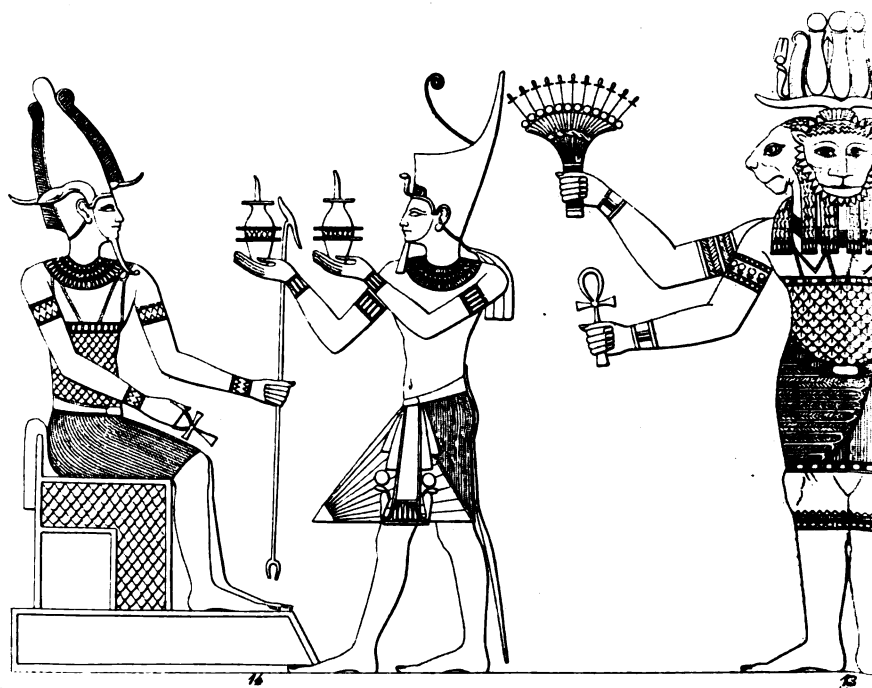
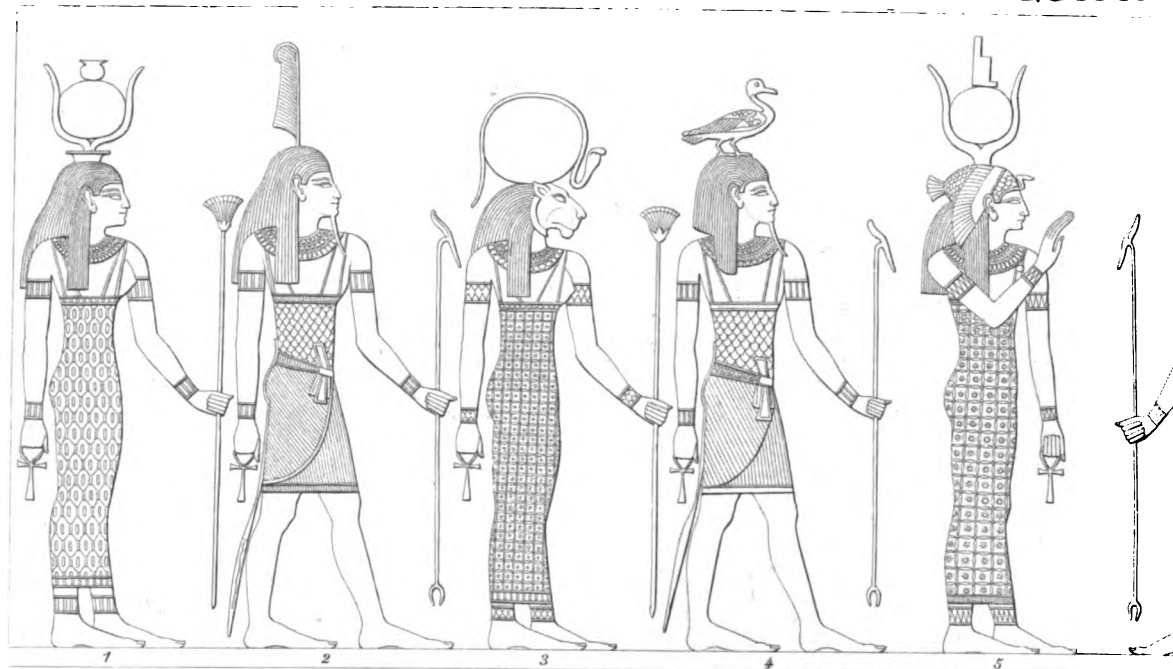
Façade of a palace. 5. Vestibule of an Egyptian house. 6. Nile barge. 7. Rock chapel of Silsilis. 8. Rock tombs
14. Sphinx. 15. Apis, or sacred bull. 16. Hieroglyphic writing. 17. Egyptian cursive script. 18, 19. Patronymic



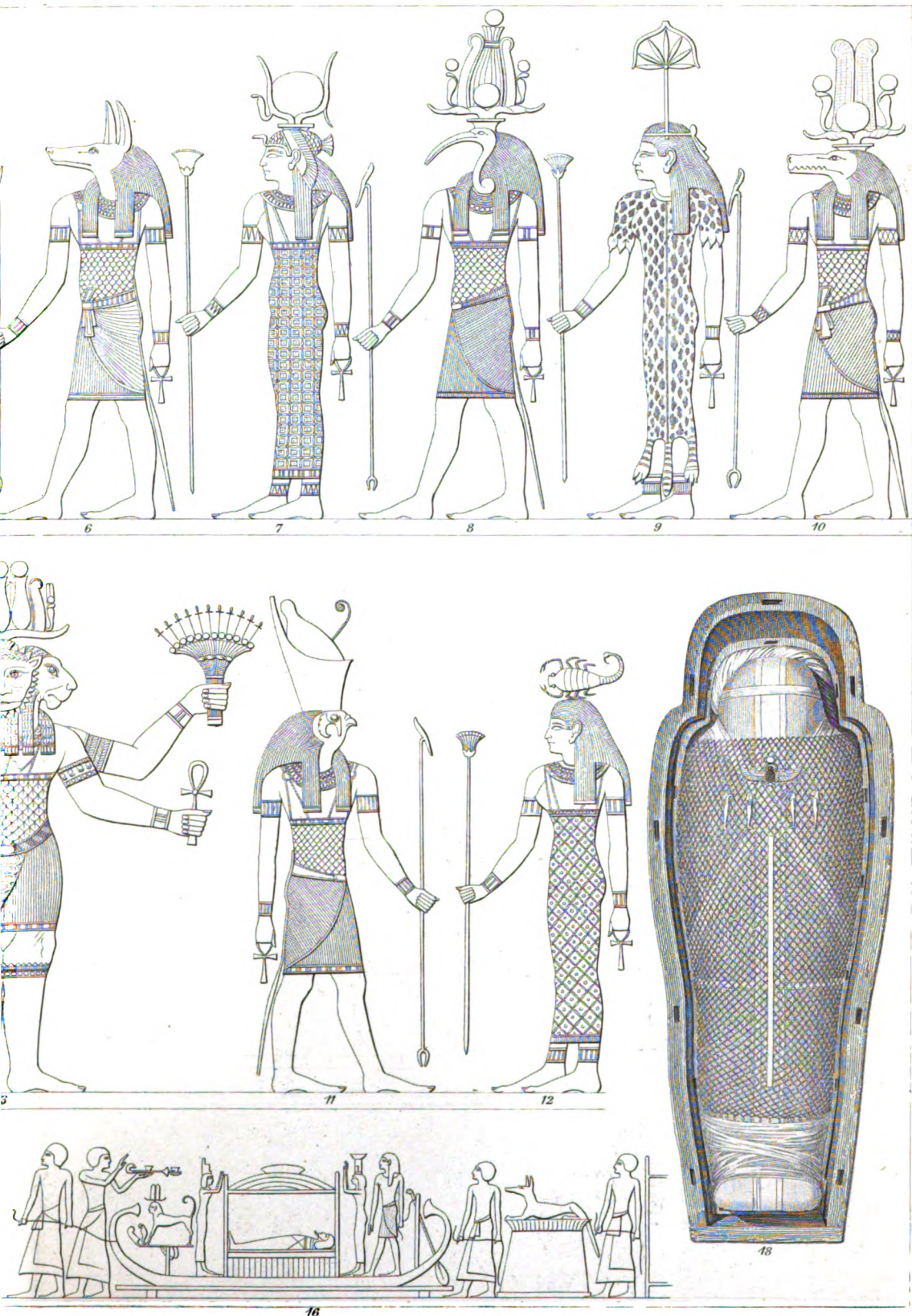
1. Agriculture : Sowing and tilling the soil ; harvesting grain ; wine-making. 2. Artisans : Smithy ; pottery ; stonecutters ; t



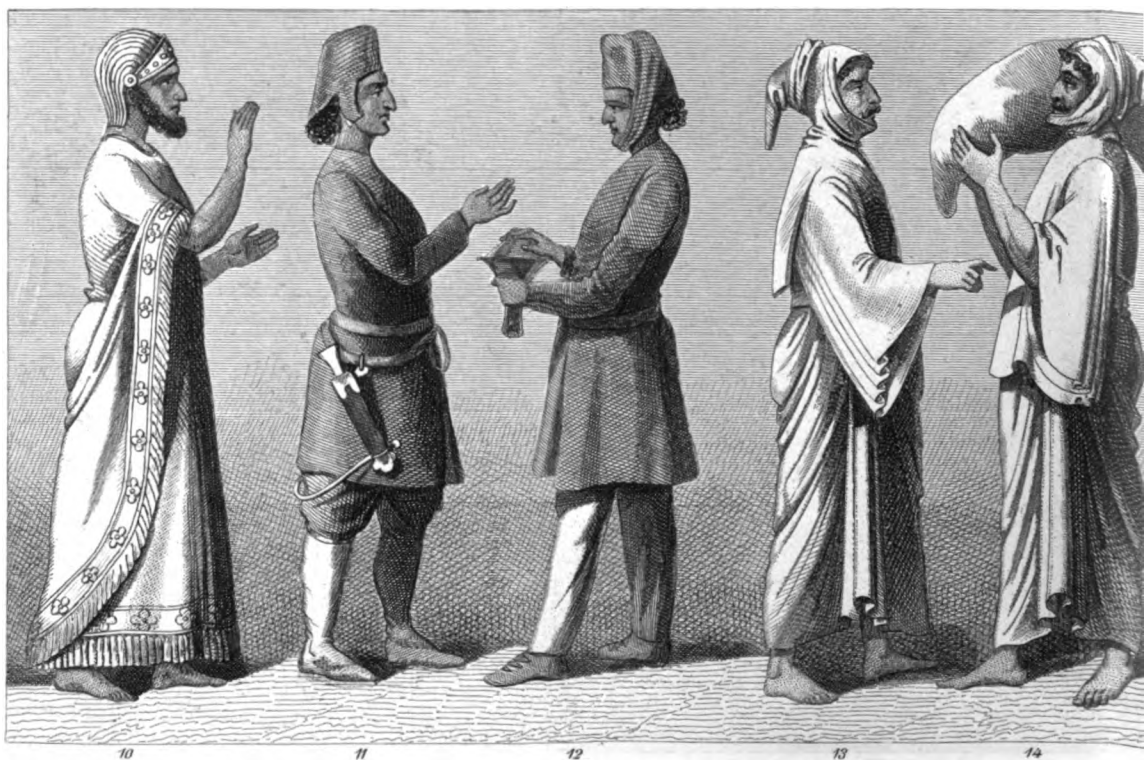
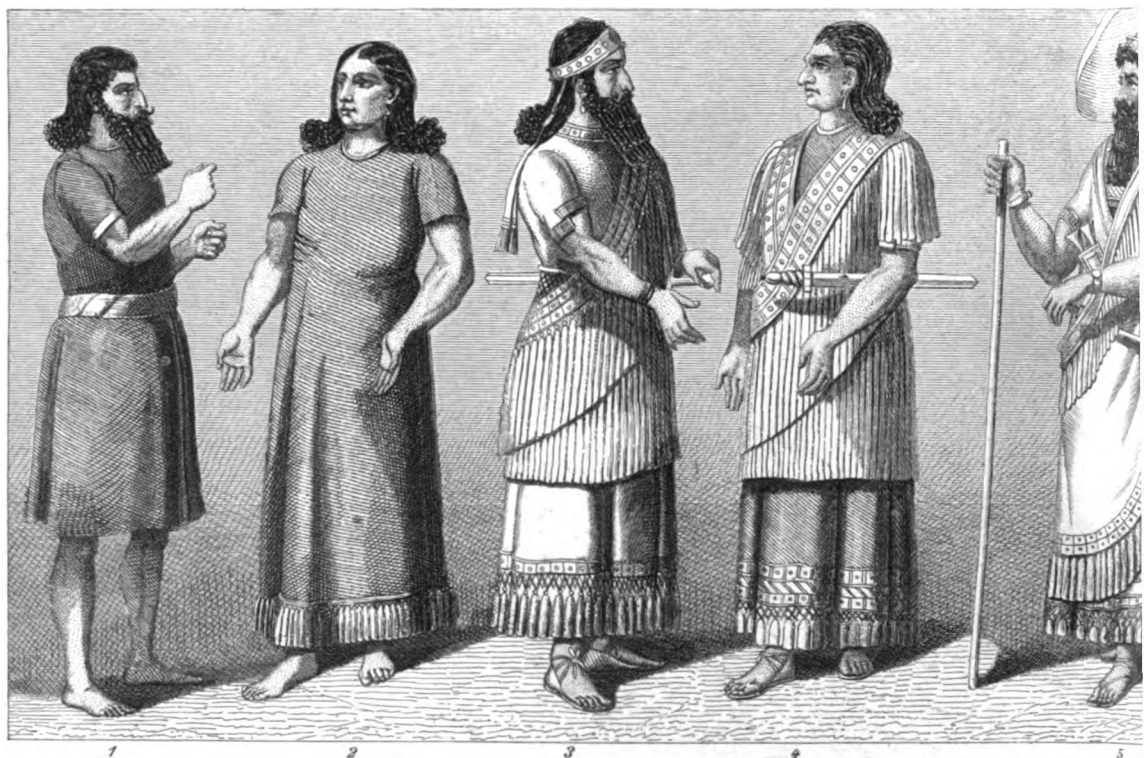
5; transporting a colossal figure. 3. Social life: Method of travelling; ceremonious reception; friendly visit and reception.



1-12. Egyptian mythology: 1, Nud; 2, Mu; 3, Tefenut; 4, Seb; 5, Isis, wife of Osiris; 6, Anubis; 7, Hathor, goddess of
14. King Sethos bringing offerings to Osiris. 15. Painting: "Judgment of the dead." 16. Painting: Egyptian funeral. 17. M



of night; 8, Thoth; 9, Sef; 10, Sebak; 11, Horus, son of Osiris; 12, Selk. 13. Ethiopian deity, from the temple of Naga. Exterior of a mummy-coffin. 15. Interior of a mummy-coffin, showing the bandage-enveloped mummy.



1, 2. Assyrian dress of the common people. 3. Costume of the prime minister. 4. Costume of the overseer of the royal domain. 5. Persian king, Cyrus. 11, 12. Persians in national dress. 13, 14. Medes, attendants of the king, in national dress. 15, 16.



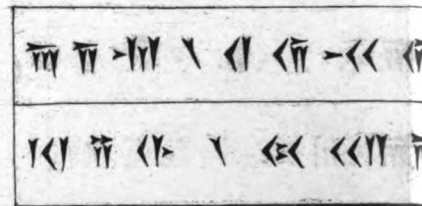
royal servants. 5. Assyrian king. 6. Umbrella- and fan-bearer. 7. Armor-bearer. 8. High priest. 9. Cup-bearer. 15, 16. Median kings. 17, 18. King's bodyguards.



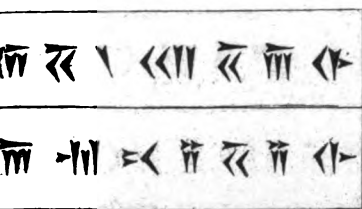
1. Assyrian royal hall (restored). 2. King on his throne. 3. King's head, showing the arrangement of hair and beard of high priest. 12. Sacred vessel. 13. Stone cylinder, with cuneiform inscription. 14-26. Assyrian jewelry: 14-21. R. Assyrian harness. 36-45. Assyrian furniture. 46-49. Earthen vessels. 50. Bell. 51-53. Axes. 54. Assyrian chariot.



4-7. Forms of royal Assyrian head-dresses. 8, 9. Head-dress of high priests. 10. Necklace of high priest. 11. Sceptre and bracelets; 22-26, ear-rings. 27, 28. Fans. 29. Sandals. 30-33. Ornamented swords. 34. Staff of office. 35. Persian chariot. 56-59. Persian utensils.



1. Nisroch and the sacred tree. 2. Feroher, guardian spirit of mankind. 3. Dagon, god of the sea. 4. Nergal. 5, 6. drinking wine and attended by servants: from a relief of the palace of Kouytjik (Nineveh). 10. Relief from the monument of King Sennacherib. 11. King Sennacherib after the chase. 15. King Sennacherib receiving an ambassador. 16. Impaling the conquered enemy.



Divinities, reliefs from Nimrud. 7. Astarte, goddess of the moon. 8. Fire-altars. 9. King Sennacherib and his wife of Shalmaneser III. 11. King Sennacherib in his war-chariot. 12. Camp scene. 17. King Sennacherib hunting. 17. Cuneiform inscription from the monument of Cyrus at Pasargadæ (Persia).



1-3. Ancient Arabians. 4, 5. Phœnicians. 6, 7. North-western Asiatics (Retennu). 8. Woman of Cyprus. 9. Phillistine Nazareth (Palestine).



10-16. Ancient Hebrews. 17. Old Jewish vehicle. 18. Jewish dwellings: portion of the present town of



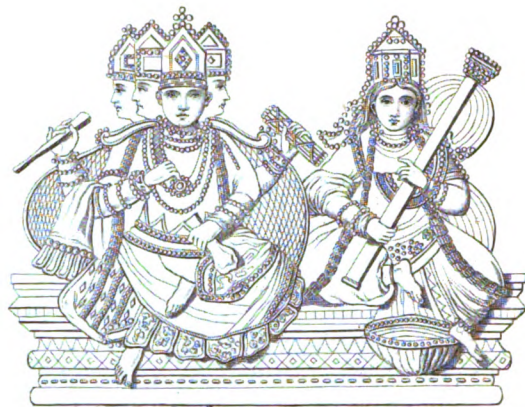
1, 2. Ancient Indian costumes. 3. Sculpture at Elora (India). 4-6. Sculptures at Mahabalipooram (India). 7-16. earthen vessels. 32. Axe. 33. Banner (flag). 34, 35. Musical instruments. 36. Relic-temple of Buddha, at Thuparamya.



Jewelry: Bracelets, anklets, and necklaces. 17. Braid of hair. 18-20. Private buildings. 21-31. Various forms of ancient pottery. 37. Procession in honor of Krishna (Juggernaut).



MYTHOLOGY AND RELIGIOUS WORSHIP.—1. Brahma, Vishnu, and Lakshmi. 2. Brahma and Sarasvati. 3. Siva (Mahadeva). 8. Indian ceremonial in honor of a deceased parent. 9. Buddha. 10. Vajrapani, subjugator of evil spirits. 11. Japanese prayer.



(Shakadeva) and Bhavani (Parvati). 4. Kama, god of love. 5. Karupanasami. 6. Beemun. 7. Sacred bulls at Tanjore, India. 8. Prayer-wheel. 12. Idol-post of the Tunguses. 13. Aijunal, Mongolian god. 14. Aijushi, Calmuck god.



1. Chiton. 2. Exomis. 3, 4. Himation. 5. Chlamys. 6. Child's dress. 7, 8. Chiton of the females. 9. Doric chiton. 15. Himation decorated with a broad border. 16. Himation worn as a shawl. 17. Chiton as a jacket. 18. Chiton as an overgarment.



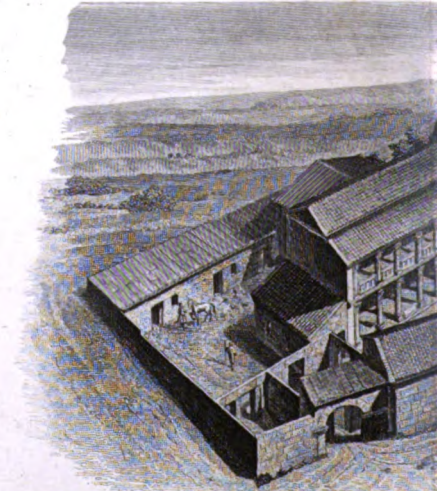
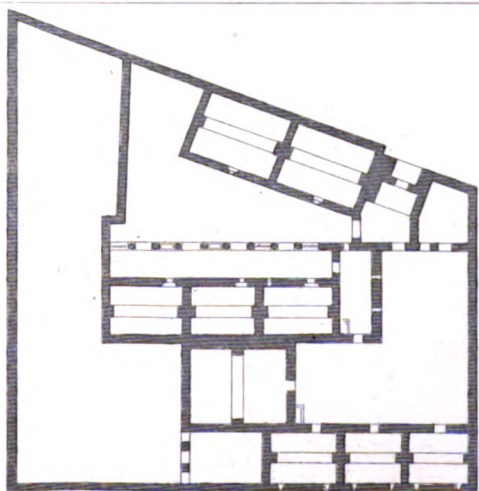
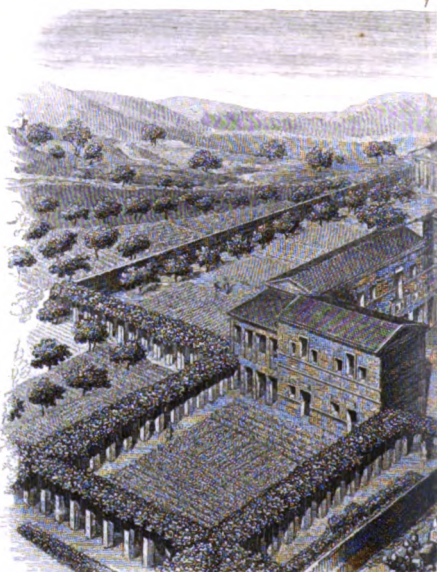
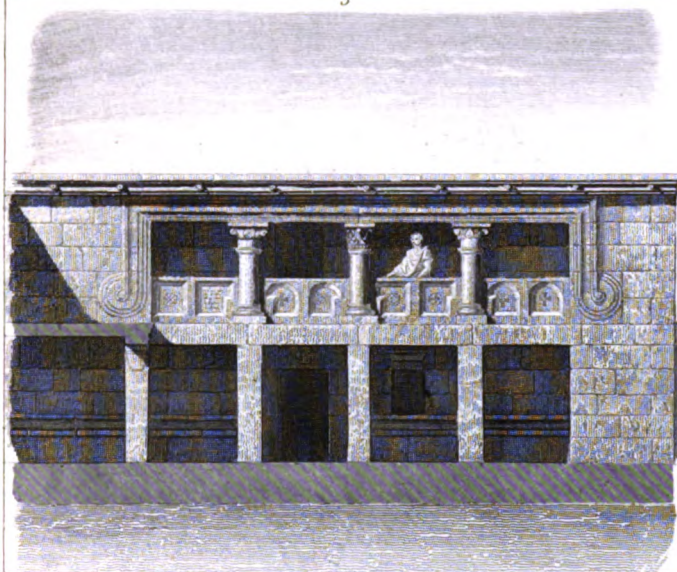
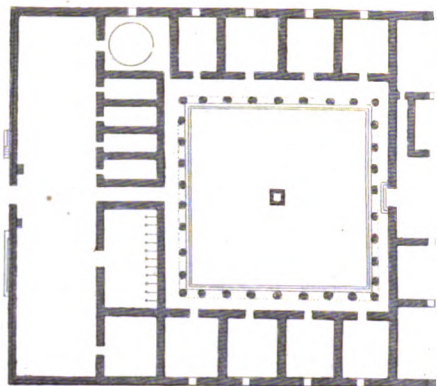
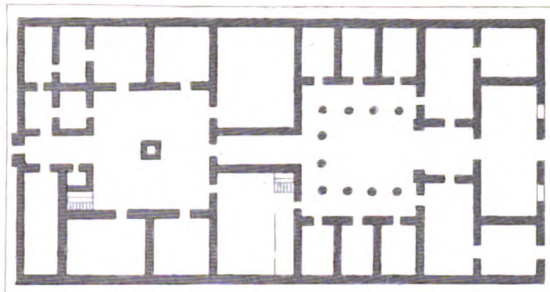
10. Double chiton. 11-13. Draped garments after the himation of the men. 14. Double costume: chiton and chlamys. 19. Chiton with sleeves.



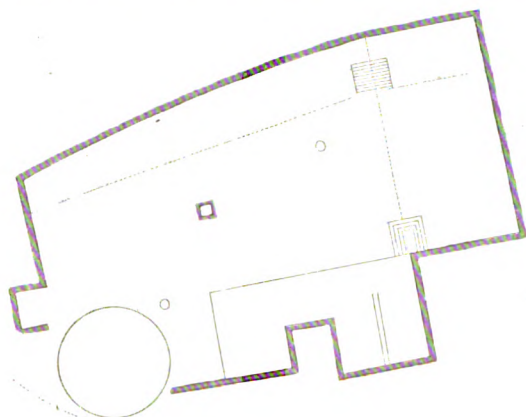
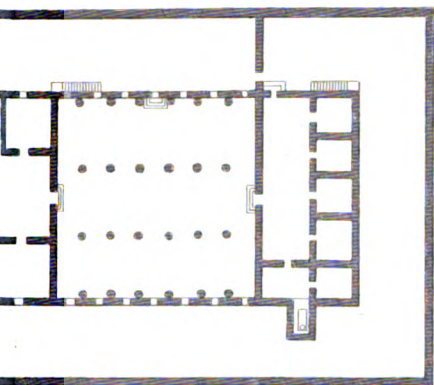
1, 2. Hair arrangement and diadems of the women. 3-16. Jewelry: Bracelets, anklets, ear-rings, brooches, girdles, etc. 17-24. Household furniture. 35. Wash-basin. 36-38. Baskets. 39-44. Household utensils and table-ware. 45, 46. Amphoræ. 47, 48. Golden vase from the tomb of a Scythian king (Southern Russia). 49, 50. Tools. 51, 52. Sceptres. 53, 54. Altars. 55, 56. Vases. 57, 58. Amphoræ. 59, 60. Vases. 61, 62. Amphoræ. 63, 64. Vases. 65, 66. Amphoræ. 67, 68. Amphoræ. 69, 70. Amphoræ. 71, 72. Amphoræ. 73, 74. Amphoræ. 75, 76. Amphoræ. 77, 78. Amphoræ.



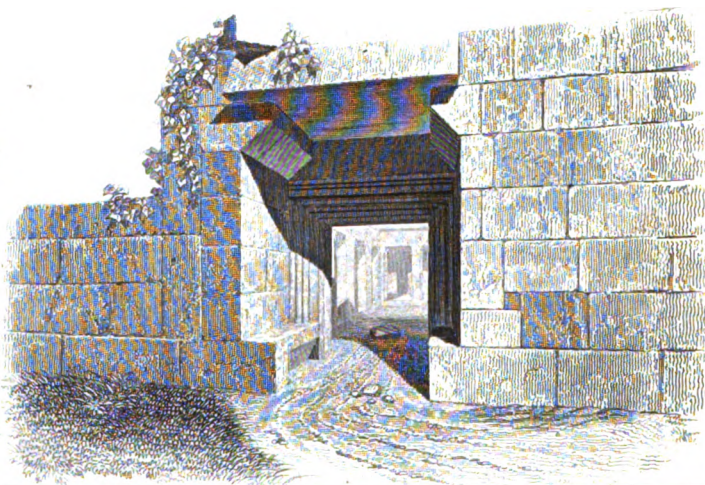
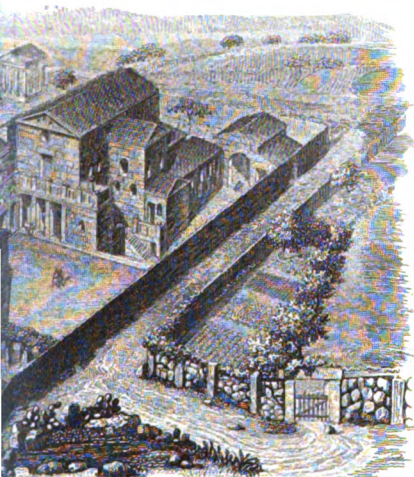
etc. 17. Fans and parasol. 18, 19. Toilet accessories. 20. Tambourine. 21, 24. Lyres. 22. Flutes. 23. Lute. 25-34. 47, 48. Mixing-bowls. 49-55. Drinking-vessels. 56, 57. Oil-flasks. 58, 59. Pots. 60-70. Earthen vases of different periods. 71-76. Actors' masks.



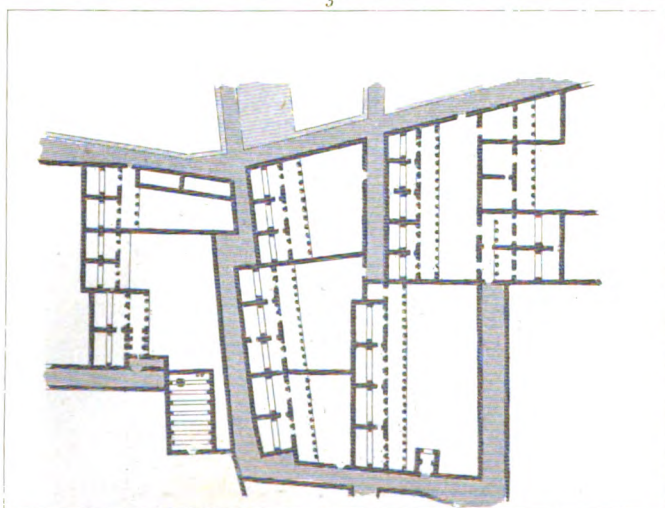
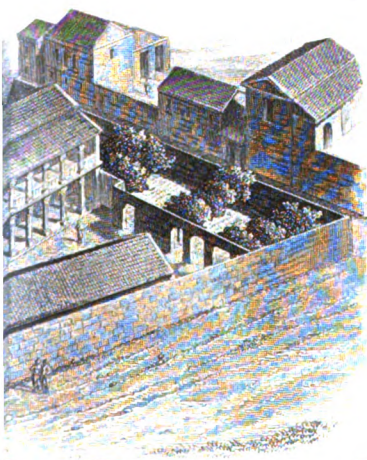
1. Ideal ground-plan of an Homeric palace. 2. Ground-plan from the remains of an ancient palace at Ithaca (Ionia).
 5. Entrance of a similar Greek house at Moudlija. 6. Greek country-house at El-Barah (restored). 7. Group of houses at Moudlija.



2



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9

n Islands). 3. Ground-plan of a later Greek house. 4. Court of a Greek house (6th century) at Refadi, in Central Syria. 5. Court of a Greek house (6th century) at Refadi, in Central Syria. 6. Court of a Greek house (6th century) at Refadi, in Central Syria. 7. Court of a Greek house (6th century) at Refadi, in Central Syria. 8. Ground-plan. 9. Part of the plan of a Greek city (El-Barah).



1. Childhood. 2-4. Gymnastic exercises. 5. Greek youth at his studies. 6. Greek tutor. 7. Hospitality.



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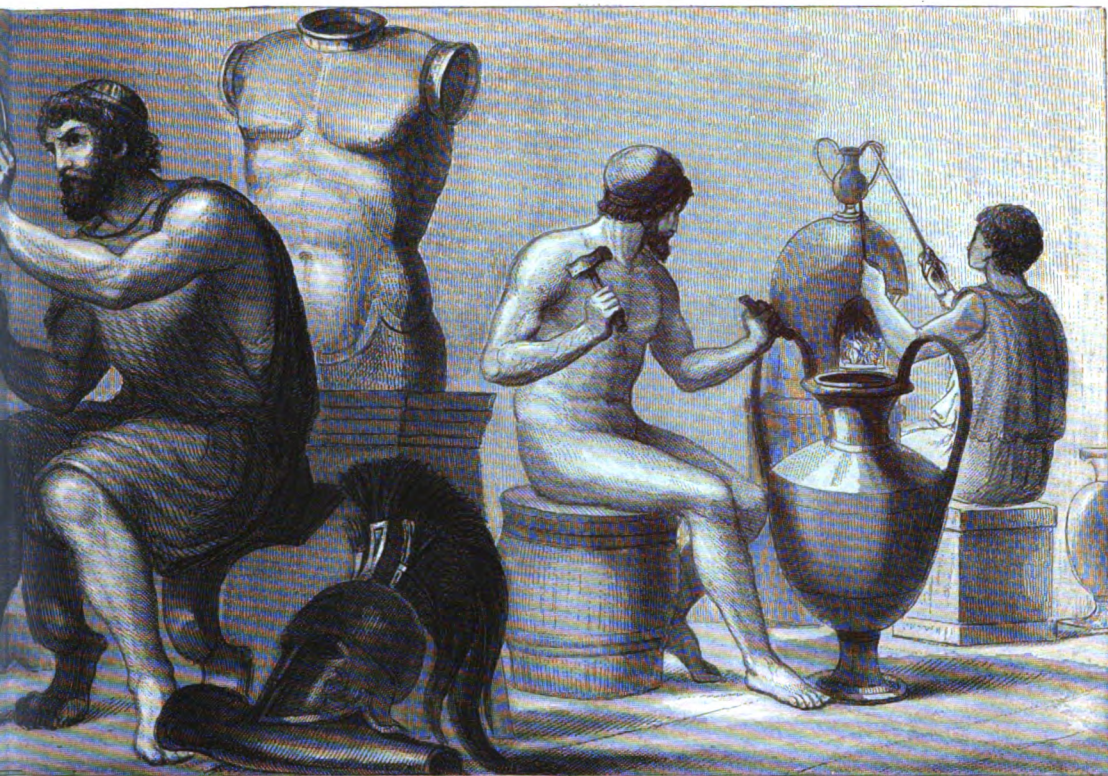


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1. Hospitality. 8. Marriage: The bridal couple. 9-11. Female life. 12. Funeral ceremony: Dressing the dead.



1. Studio of a Greek sculptor. 2. Manufacture of armor. 3. Pottery. 4. Farmer. 5. Hunt.



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ter. 6. Peasant going to market. 7. Fisherman. 8. Chariot used in the hippodrome races.

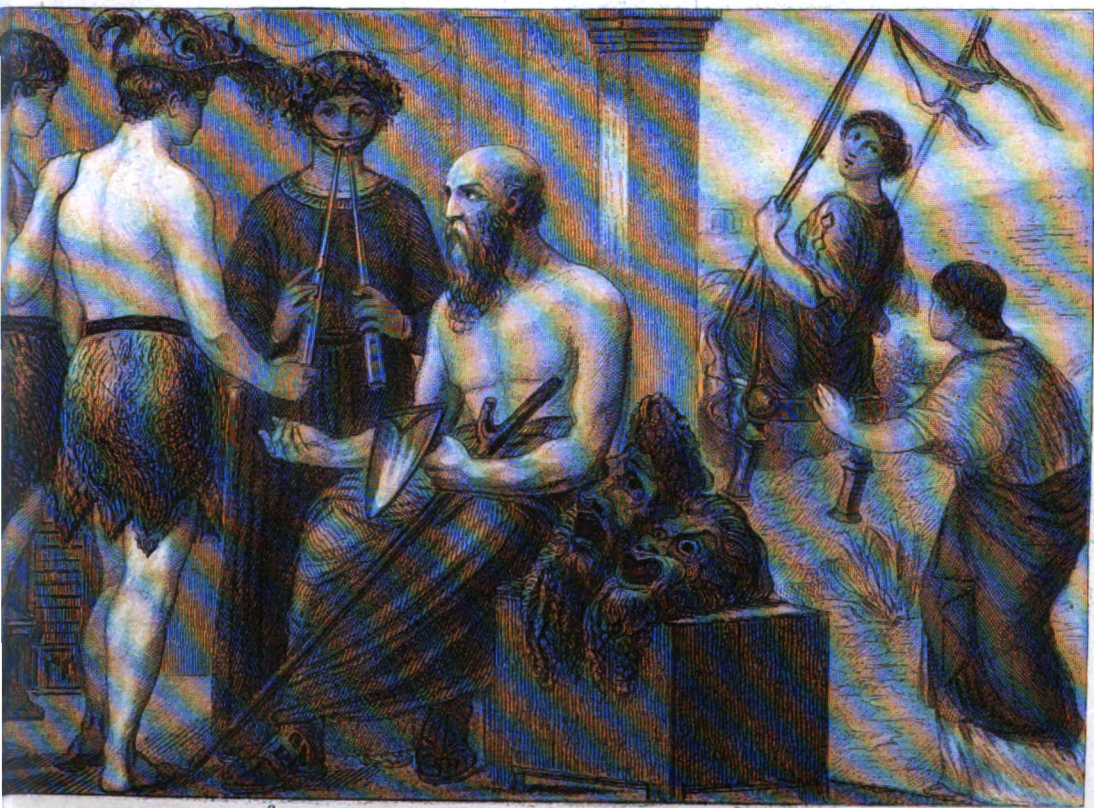


1. Greek priestess. 2. Sacrificial altar. 3, 4. Female dancer and flute-players. 5. Game of



3

4



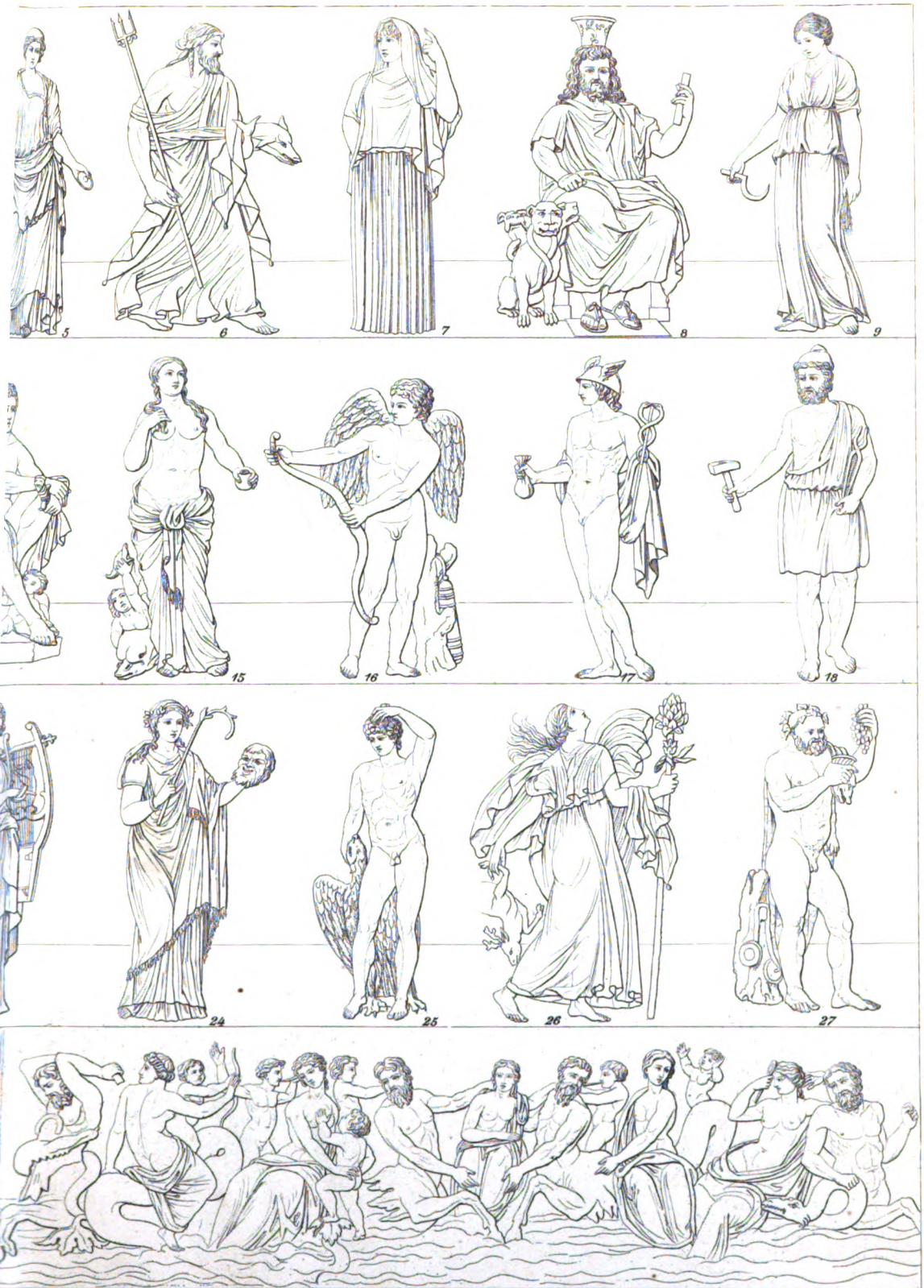
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me of "morra." 6. Domestic life. 7. Swinging. 8. Instruction in a Satyr-drama.



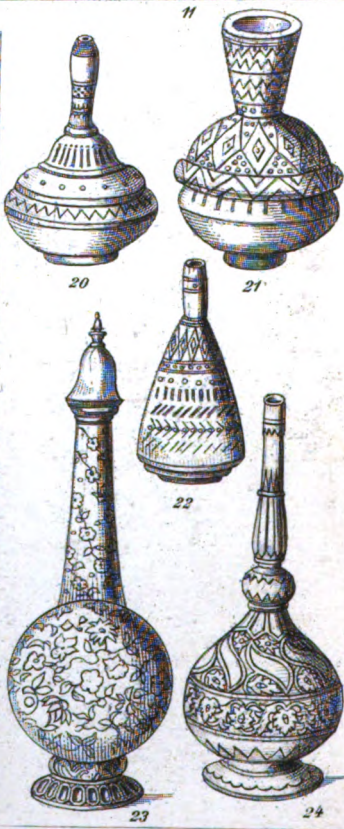
CLASSICAL MYTHOLOGY.—1. Rhea. 2. Saturn. 3. Cybele. 4. Jupiter. 5. Juno. 6. Neptune. 7. Vesta. 8. Pluto. 18. Vulcan. 19. Æsculapius. 20. Hygeia. 21. Vertumnus. 22. Melpomene. 23. Erato. 24. Thalia. 25. Ganymede.



9. Ceres. 10. Bacchus. 11. Minerva. 12. Apollo. 13. Diana. 14. Mars. 15. Venus. 16. Cupid. 17. Mercury. 26. Bacchante. 27. Silenus. 28. Bacchanal procession. 29. Tritons and nereids.



1-3. Phrygian male attire. 4, 5. Male attire, Grecian Asia Minor. 6. Ancient Lydian female attire. 7, 8. Phrygian female attire. 9. Phrygian female attire. 10. Phrygian female attire. 11. Phrygian female attire. 12-17. Household furniture and utensils from Asia Minor. 18, 19. Sassanide kings. 20-24. Persico-Arabic vessels.



female attire. 9. Coan robe; manufacture of the island of Cos (Asiatic Turkey). 10, 11. Costume of North-eastern Asia



1, 2. Etruscan male and female costumes. 3. Roman tunic. 4. Roman toga. 5. Dress of a Roman matron. 6. "Pallium". 7. Roman dress. 8. Roman child. 9. Military uniform of a general (about 430 A. D.). 10, 11. Late Roman consular costumes. 12. Circus attendant. 13, 14. Roman dress.



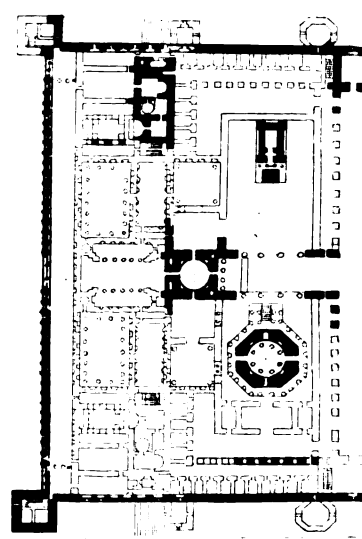
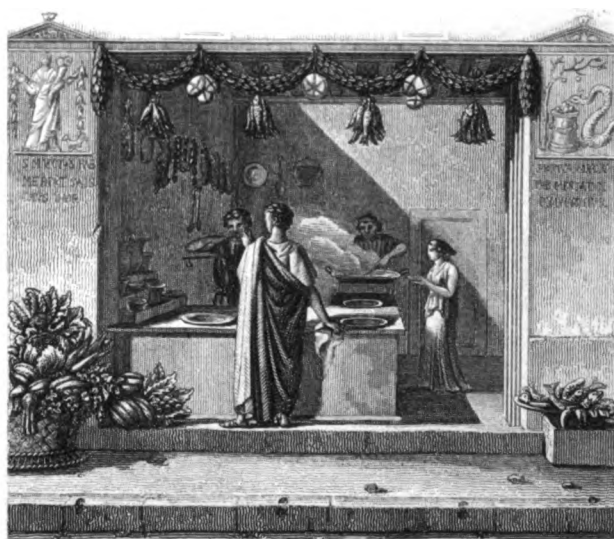
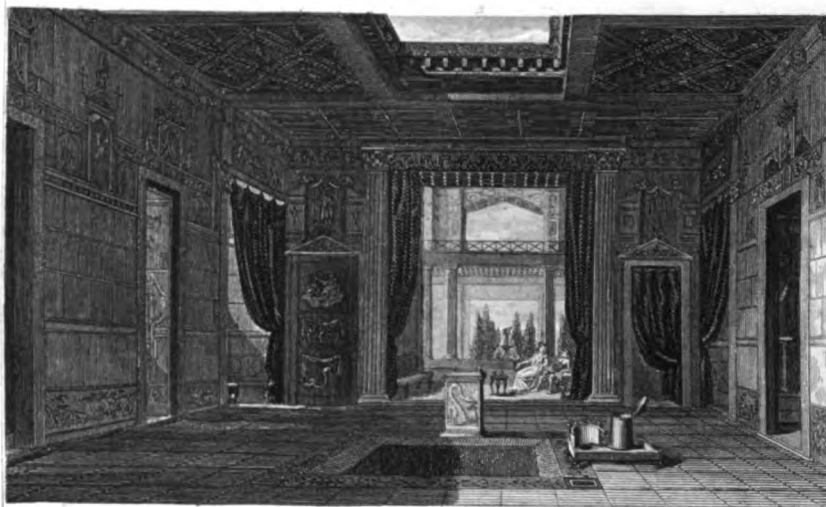
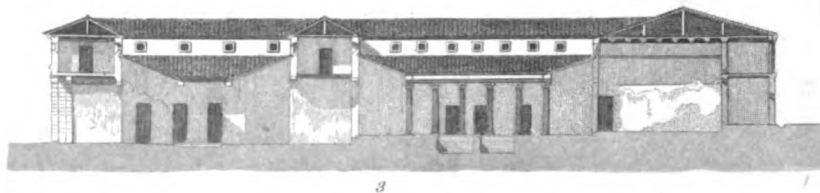
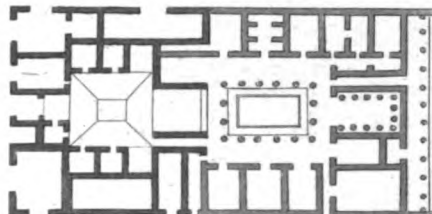
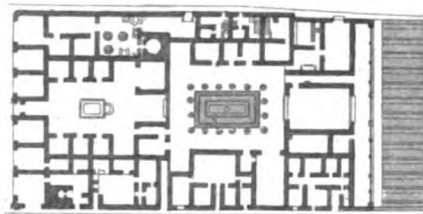
alla," dress of a matron of rank. 7. Priestess. 8. Lictor. 9. Peasant. 10. Empress Galla Placidia. 11. Valentinian III. 17. Rheno-Roman costumes.



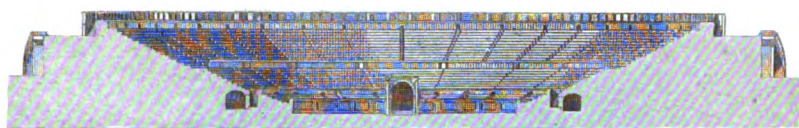
1. Accouchement. 2. Bridal toilet. 3. Game of ball, from the Baths of Titus. 4. Female artist



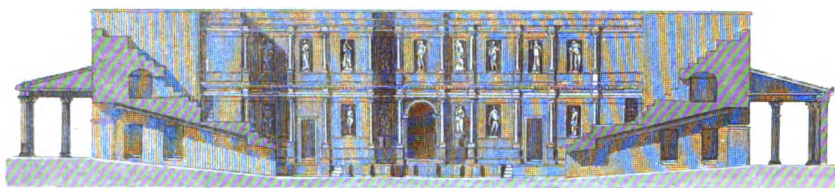
1. Artist. 5. Actors masked. 6. Gladiatorial combat. 7. Session of court. 8. Public sacrifice.



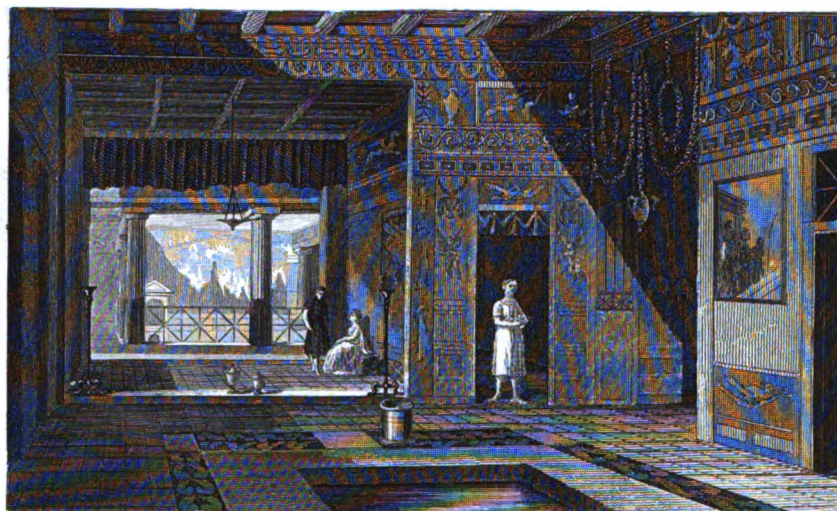
1. Ground-plan of a house at Pompeii (Italy). 2. Ground-plan of the ordinary Roman dwelling. 3. Longitudinal section of a Roman house. 7. Pompeian cookshop. 8. Ground-plan of the palace of Diocletian, at Spalato (Austria). 9. Hall of Diocletian's palace. 12. View of the stage in the theatre at Herclaneum (restored).



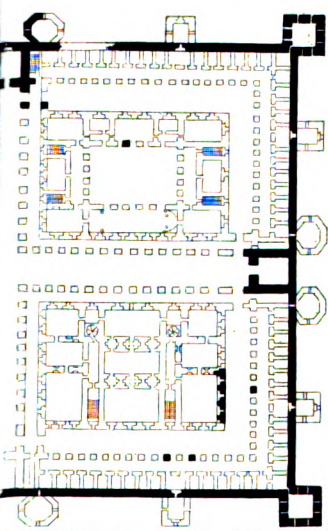
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9

section of a Roman house. 4, 5. Views of the interior of Pompeian houses (restored). 6. Garden of a Pompeian house.
10. Roman nymphæum, from an excavation near Salzburg (Austria). 11. Cross-section of the amphitheatre of Pompeii.



1. Roman writing-utensils and parchment rolls. 2. Roman toilet-accessories. 3. Mirrors from Pompeii. 4. Pins with
 15, 16. Ornamented earthen bowls. 17. Small amphora. 18. Ladle. 19. Ornamented mixing-bowl. 20. Branding-iron.
 balance. 33. Scale-weight. 34. Wine-bucket. 35. Lantern. 36. Sickle. 37. Marble table and drinking-cups. 38, 39.
 Funnel. 48. Earthen tile. 49. Torch.



decorated heads. 5-7. Rings. 8, 9. Cosmetic receptacles. 10. Comb. 11. Bathing articles. 12, 13. Keys. 14. Dice. 21. Kitchen utensils. 22. Wine-sampler. 23. Spoon. 24-30. Household utensils. 31. Marble vase. 32. Weighing-ronze lamps. 40. Candelabrum. 41. Tripod. 42, 43. Roman seats. 44. Fire-hearth. 45. Fire-pan. 46. Stove. 47.



1. Etruscan cinerary urn. 2. Earthen urn found in the Albanian Mountains. 3. Etruscan chariot of bronze. 4. 36-40, 73, 74. Articles of adornment. 41, 54, 55, 71. Pendants. 42-51, 84, 85. Bronze clasps. 52, 53, 56, 72, 80-82, 87, 88. of use united by a ring. 65. Bronze comb. 66. Key. 67. Hook. 69, 92, 93. Pins with decorated heads. 70. Tweezers. 71. Rings, used as money. 95. Horn. 96. Pot. 97. Vase. 98. Cup. 99, 100, 107. Wooden vessels from Alemannic tombs. 108. Carved wooden chair from Iceland, in the museum at Copenhagen. 109. Bronze chair of King Dagobert, in the Louvre.



4. Tripod. 5. Chair. 6-8. Vessels. 9, 10. Scarabæus. 11-33. Vessels and household utensils. 34. Bell. 35. Ladle. 36-63. Necklaces, bracelets, and armlets. 57, 58. Diadems. 59. Headband. 60-63, 89. Finger- and ear-rings. 64. Articles. 65-78. Knives. 79. Shears. 83. Bronze vessel. 86, 91. Vessels with thong and tendril decoration. 90, 94. Spiral. 95. Vessel. 101. Vessel. 102. Wooden chair. 103, 104. Wooden chests. 105. Shoe found in an Alemannic tomb. 106. Dishes. 107. Vessel at Paris.

THE MIDDLE AGES AND MODERN TIMES.

INTRODUCTORY.—BARBARIC PERIOD.

THE Romans speak of numerous nations, in addition to those that have been already described, with whom they had come into hostile or friendly contact, and of whose existence, in some cases, we should otherwise have remained ignorant. Representatives of such nationalities are even depicted on monuments or otherwise portrayed. On the other hand, we are not able in every instance to bring description and pictorial representation into agreement. An illustration of the destruction of a Dacian pile-village, for example, is shown upon the celebrated pillar of Trajan; among the fugitives we meet with the figure of a man, reproduced on Plate 34 (*fig.* 10), who may be regarded as a representative of this oft-mentioned nation. An illustrated copy of Virgil from the first century of our era shows a battle between Romans and barbarians; the artist had doubtless drawn the latter from contemporary inhabitants of distant countries who had served him for models. Figure 9 is taken from this manuscript, but we are unable to say positively to which nationality it belongs; if we have regard to written remains, the illustration most nearly corresponds with Cæsar's description of the Gauls.

The Iberians.—It is probable that the earliest inhabitants of Northern and Western Europe, traces of whom occur back in the Glacial Period, were overcome by the Iberians, a black-haired race, who, coming from the south, probably Africa, across the Strait of Gibraltar, occupied Spain in particular, but also pushed into more northern countries—namely, France, the British Isles, Switzerland, and Southern Germany. The Basques, who dwell in certain valleys of the Pyrenees, are pure descendants of this race. (See Vol. I. pp. 371–375.)

Migration of the Aryan Races.—The Iberians gave way in turn before the steady encroachments of the Aryan stream of migration which moved from Asia, and which gradually divided into three main branches. The first branch, or the vanguard, was composed of the Celts. These drove back the Iberians from the North-east, if they had reached that far, and eventually intermingled with them, forming in Spain the Celtiberians, in Northern Italy and France the Gauls, in England the Britons, etc. The vacated regions of the East and North were next occupied by the pure-

blooded Teutons. The Slavs formed the rear of the migratory column. Their seats had probably been in the extreme East, and they had there become intermingled with those Mongolian and Tartar elements which even yet distinguish them into North and South Slavs. The Lithuanians are a separate people. Their language is the most closely related to the Sanskrit of all the European tongues, but their origin and history are shrouded in obscurity.

The Celts.—The characteristics of the Celtic nation, which preceded the Teutons on the field of history, but whose individual development was hindered by the Roman conquest, are described by Cato in such unmistakable terms that we readily recognize in them the modern French people. There are numerous evidences that the Gauls possessed not only the native capabilities of the Aryan family, but even its peculiarities. The special bent of their national character, though influenced somewhat by interminglings, is to be attributed chiefly to their unpropitious fortunes. It must be remembered that the Gauls languished for centuries under the yoke of foreign conquerors who in vain attempted to subdue the Teutons.

The phantom of glory deluded the Celtic race with the promise of a higher destiny, and occupied their imagination to the injury of their mental powers. Individual tribes among them sank into lethargy, while others went astray in the wildest fanaticism. Inclined to credulity and self-deception, they lost the true basis of moral growth. They accomplished extraordinary results when, as in all matters of taste, only a light and formal realization of the ideal was required, but they were no longer qualified to carry out the fundamental principles of human culture.

The Teutons possess the greatest interest for us from the standpoint of our own subject as well as from that of every other, because they are the truest representatives of the nations which now appear on the stage of history, and, notwithstanding manifold later interminglings, have preserved their original nationality in its purest form. Their migrations, settlements, divisions, etc. must be left to the research of the historian proper; our task is to illustrate the life of these nations. Fortunately, we are aided in this by the circumstance of their possessing an advantage entirely unique: we refer to the *Germania* of Tacitus, a treatise—we may say a eulogium—upon their national character, which, supplemented by other statements and confirmed by the events of subsequent history, imparts valuable knowledge as to their condition and circumstances—a knowledge which we are enabled to gain in the case of other nations only through uncertain inferences.

As drawn by the sympathetic pen of the great Roman historian, the Teuton of that day stands out so complete and rounded that later history has added nothing to the nobility of his character, but has rather taken from it much that is valuable. The true history of the German is that prehistoric one which shaped his character and gave it such moral power that it has endured thousands of years and seems destined to give new

life and energy to the world. An insight into the prehistoric growth of the German people would be most valuable, for it would show us what Man is able to develop from the pristine condition of nature by the undisturbed growth of his powers.

Prehistoric Life.—Guided by philology, we can say with certainty that the Teutons were nomads at the time when they separated from their Indian brethren, since many words referring to such a condition of life are cognate to those of the Sanskrit, which is not the case with regard to terms relating to agriculture.¹ Indeed, the designation of many important terms used in every-day life originally conveyed ideas connected with flocks and herds. The root *vri*, for example, means “to enclose a place,” and from it is derived the word *Vara*, “garden” or fenced-in spot, in early times the place where the movable huts were set up and into which the cattle were driven at night. The master of such a place was called *Fro*, still preserved in the German word *Frondienst*, “villainage;” the mistress was called *Frau*. In the word *umfrieden*, “to enclose,” the root remains unchanged, and the word *Friedhof*, “cemetery,” means simply “the enclosed yard.” The word *Friede*, “peace,” is connected with the same root, for peace was found only within the enclosure, while hostility and force prevailed without.

The word *freien* was used to denote the establishment of a separate homestead, and this was so closely connected with the entrance into the matrimonial state that in course of time the inferential signification “to woo” prevailed over the original one. Only the *Freie* (“the free man”—*i. e.* a member of a pre-existing household) could establish such a place; the villain could own no property. The goddess of the marriage relation was called *Freia*. But it would lead us too far beyond our plan were we to follow the ramifications of this root. We will only add that *Sohn*, “son,” which is connected with *Sonne*, “sun,” means “the traveller;” that is, he who goes about to oversee shepherds and flocks. *Tochter*, “daughter” (*thaugtra* in Sanskrit, *θυγατηρ* in Greek), means “the one who milks,” while the Latin *filia*, signifying “the spinner,” indicates a more advanced state.

Character.—The basis of the Teutonic character is freedom. We do not mean that liberty which is worshipped as an abstract ideal by all men, for it is well known that their constitution permitted slavery, but we mean that the natural independence of the Teutons was not destroyed by their long migration, which was undertaken not in obedience to the behests of a despot, but as a rational yielding to necessity.

The Teutons preserved that independent trait wherever they settled, for each one laid out his farm where he chose, and usually at such a distance from others (as is still customary among the North-German peasants)

¹ The Old English verb *to ear* (meaning to plough), which is found in various forms in most of the European languages, and, though not connected with any existing Sanskrit word, is traced to a supposed Aryan root, has been cited by Max Müller and others as evidence of some acquaintance with agriculture by all the members of the race before their separation.—ED.

blue eyes," and blond hair which are characteristic of the Teutonic races produced, remarkably enough, a sensation of fear in foreigners.

Dress.—Ancient authors agree in the statement that the dress of the Teutons was very scant. They went naked until the age of puberty. Cæsar speaks of their being clad in skins. According to Tacitus, all wore a short cloak fastened on the right shoulder, which usage accounts for the bronze clasps (*pl.* 33, *figs.* 42–51) that have been found in their ancient tombs. Wealthier individuals wore beneath the cloak a close-fitting garment reaching almost to the knees and having long or short sleeves. Trousers, for which the term *hose* occurs quite early, were adopted from the Romans, and by the Goths, who lived in Eastern Europe, from the Scythians. Furs were used as a protection against the cold, the better sort being even brought from the East.

The women wore dresses which left the arms and shoulders bare; probably they also wore an over-garment corresponding to the cloak of the men. Tacitus mentions that they preferred purple-colored garments. The material was everywhere of wool or linen. Men as well as women bestowed great attention upon the care of their bodies, especially by the use of baths. We have only lately been enlightened upon the subject of coverings for the feet. Shoes (*fig.* 105) found in the Alemannic tombs near Oberflacht in Swabia, as shown in the illustration, consisted of a single piece of leather fastened to the foot by means of straps. A similar shoe, probably belonging to a much later period, was recently found in a swamp at Aurich.

Ornaments.—Articles of ornamentation were highly prized. In their tombs we find combs of bone and bronze (*fig.* 65), tweezers (*fig.* 70), ear-picks, and similar objects, often united by means of a ring (*fig.* 64). Of jewelry proper we find necklaces, bracelets, and armlets (*figs.* 52, 53, 56, 72, 80–82, 87, 88), as well as finger- and ear-rings (*figs.* 60–63, 89). Headbands (*fig.* 59) were often widened into diadems (*figs.* 57, 58), but were not necessarily signs of princely dignity. Pendants (*figs.* 41, 54, 55, 71) of various styles were occasionally worn, and were arranged according to individual tastes. The jewelry was principally made of bronze. Tacitus relates that the Teutons looked with indifference upon the costly silver ware which was often part of their booty, and prized it less than their rude earthen vessels; but they soon became very susceptible to the glitter of gold. Spiral rings (*figs.* 90, 94) seem to have been worn, and bits broken off from these served as money.

Hair-dressing.—Both sexes bestowed the greatest care upon the beautiful hair with which Nature had endowed them, and often anointed it with grease or simple pomades prepared by themselves. The Suevi wore it combed forward and bound into a coil on the top of the head. The long pins with decorated heads (*figs.* 69, 92, 93) so frequently found were probably hair-ornaments. Slaves were compelled to wear the hair cut close. A freeman who allowed his hair to be cut was looked upon as dishonored and unworthy of freedom. Among the Franks, in the course of

time, the kings alone retained the privilege of wearing a full beard and curled hair; others wore the hair moderately short, with only a moustache (*pl.* 34, *fig.* 12). When Arechis (*fig.* 11), duke of the Lombards, was elevated to the rank of a Roman patrician by the Greek emperor, he was presented, together with the purple mantle, with a comb and scissors with which to trim his hair after the Greco-Roman fashion.

Dwellings.—We should hardly be able to represent to ourselves the ancient dwelling-house of these peoples did we not have a tolerably accurate model of it in an earthen urn (*pl.* 40, *figs.* 1, 2) which is preserved in the museum of Berlin. Strabo the geographer relates that the Teutons transported their possessions on wagons, and merely erected huts intended to serve as temporary abodes. This, of course, was true only for the migratory period. When they began to dwell in permanent abodes they were compelled to construct more substantial dwellings. The urn referred to above shows the simplest style of house, consisting of low walls and a lofty straw roof. Tacitus speaks of more substantial dwellings built without stones or tiles, but yet according to fixed custom. They were, no doubt, log houses made of unhewn trunks of trees, the chinks being stuffed with moss and plastered with ordinary clay. Conspicuous parts, such as the front or the gable, were plastered with a glossy kind of clay. These huts no doubt contained but one apartment; a hearth upon the level earth and perhaps a few elevated sleeping-berths probably constituted the entire interior arrangement. If more room was needed, a second hut was built near the first.

The Roman manner of building gradually gained ground in German countries; but in the North, in the Scandinavian regions and in Iceland, where the ancient customs were longer retained, it underwent a peculiar development. Even in late centuries the palaces of the kings were constructed of wood, but the joists were finished, and even ornamented with carved work in appropriate places. Instead of straw, the roofs were covered with shingles, through the openings between which the smoke passed out. A division of the interior space was as yet unknown. The main building served as a place of sojourn for the family, for the reception of guests, and as a drinking and feasting hall. The women and the servants occupied separate dwellings. Barns and stables completed the collection of buildings which formed the abode of a nobleman or a rich land-owner.

Furniture and Utensils.—The household goods consisted of a few articles of metal and numerous wooden and clay vessels. The booty gained in war and on raids, such as were often undertaken in the North, was preserved more from a faint idea of its value than from appreciation of its use. It constituted those princely treasures which play so great a part in the old Sagas. Plate 33 gives the necessary information about the household goods as far as they have any bearing upon the History of Culture.

The manufacture of bronze utensils, which, as has been stated (*p.* 49),

had previously been imported from Etruria, became naturalized by the time of the fall of the Western Empire. The peculiar thong and tendril decorations, which pertain exclusively to the North, upon vessels (*pl.* 33, *figs.* 86, 91), implements, and ornamental objects (*figs.* 84, 85, etc.), furnish sufficient evidence of this. Vessels like those shown in Figures 99, 100, and 107, taken from Alemannic tombs, the chair (*fig.* 102), and the chests (*figs.* 103, 104), prove that the Germans knew how to give appropriate form to wooden articles. Wooden candlesticks, apparently turned, also occur, proving that the houses were already lighted by something better than the flickering pine torches which had been in use at an early period. The chairs (*figs.* 108, 109) show that progress corresponding to that of the house had been made in the case of furniture also. The original of Figure 108, now in the museum of Copenhagen, was made in Iceland, the faithful custodian of old Teutonic customs; it shows the style of ornamentation above referred to in its full development. The bronze chair (*fig.* 109) is in the Louvre at Paris. It is said to have belonged to the Merovingian king Dagobert, and it bears unmistakable traces of Roman influence. But the most precious treasures of the household were the weapons of the husband. They were untouched by Latin influence, which is a proof of the high esteem in which they were held by their owner.

Religion.—There are extant no figured representations of the gods either of the Celts or of the ancient Teutons. Religion found poetical and popular expression, but never in plastic forms, as among the nations of classic antiquity. Among the Celts, probably in consequence of the invasion of the Romans, the religious creed seems to have been kept a secret by the priests, so that we know even less of it than of the creed of the Teutons. In the narrower sense the objects of worship in the national religion of the ancient Teutons were the immediate powers of Nature, and its feasts were determined by the change of the seasons. Antiquarian research has discovered traces of the ancient faith in many popular superstitions, customs, and usages of the present time. The poetical form of the old German mythology was especially developed in the North. It was in substance as follows.

Mythology.—The first cause of existence, *Alfadur* ("all-father"—*i. e.* the father of all), divided the chaos which lay beneath him into an upper kingdom of light, *Muspelheim*, and a lower one of darkness, *Niflheim*. Between these two realms originated the giant *Ymir*. After he was slain the earth was formed out of his body. The demigods (*Asen*), sprung from the All-father in *Muspelheim*, were personifications of the several powers of Nature. Some scholars, however, interpret them as representatives of ancient national heroes.

The supreme divinity was *Odin* (*Wodan* among the Germans), who was "lord of heaven and earth," and especially of war. Closely related to him was *Thor*, the "god of thunder." *Freia*, the "goddess of the moon," was also the patron deity of love and matrimony, of song and

rejoicing at the fruits of spring. *Baldur* resembled her; he was the type of manly beauty, mental as well as physical, a gentle being in whose tragic fate the Teuton unconsciously lamented that it had not been given to him, as it had been to the Greeks and Romans, to bring forth the principle of Beauty in his development. *Hertha* was the "goddess of the earth;" *Aegyr*, "god of the ocean;" and *Loke*, "god of fire," the evil being of Northern Mythology.

This, like other mythologies, associated spirits with natural events as well as with the various relations of human life, but the youthful imagination of the Teuton, unlike that of the Southern races, was guided not by creative power, but by intuitive sentiment, and he estimated the nature of his gods according to the beneficent influences which they exercised. Fairies looked after the small details of the course of nature; misshapen trolls inhabited the mountains and forests; protecting spirits (*Wölen*, *Spadisen*) assisted the needy; *Fylgiers* and *Hamingiers* were present at births and deaths; fates (*Nornen*) presided over the destiny of every mortal. *Walkyrs*, the virgin shield-bearers of Wodan, accompanied the heroes to the battlefield and bore those who fell to the halls of Walhalla. There the slain heroes quaffed inexhaustible horns of mead and feasted at a never-ending banquet. But cowards were cast, after an infamous death, into Niflheim, where they dragged out a rueful existence in the kingdom of the blue-white *Hela*. The entire world of the gods themselves was eventually to be destroyed by the treason of Loke; but the All-father was to replace it, after changing the inadequate earthly circumstances, by a new and everlasting *Godheim* (home of the gods).

Priesthood.—According to Cæsar's description, the Druid priesthood among the Celts had a gloomy and fearful character. Among the Germans the priesthood, although but little organized, had attained great importance on account of its moral influence. Both in war and in peace the priests influenced the great affairs of the people by their blessings and advice. They were the prophets of inspiration and the mouthpieces of assemblies. They were the executioners of the capital sentences pronounced by the people. Perhaps in this sense we are to understand the sacrifices of Roman prisoners which took place after the defeat of Varus and on other occasions. As bards they fostered a community of feeling among the people, and did not disdain to exalt by means of song the general rejoicing on public occasions.

Conclusion.—We do not, of course, expect to find intellectual aims among a people in a state of nature. But a rich and deep vein of sentiment took the place of such aspirations. The transition to a state of enlightened self-consciousness forms the subject and object of all their subsequent history. This transition was effected only after a struggle of a thousand years' duration, and an unexampled martyrdom stamped the issue as an enduring testimonial for all mankind.

The struggle with the preceding world of antiquity, as conceived and developed by the Romans, first awakened the dormant powers of the race,

but this contest was waged not only in the countries beyond the Alps and the Rhine, but also upon native soil, where its influence entered into the most complex phenomena of civilization, at times diverting it, again promoting it, but always reacting upon it. The object of the following pages will be to exhibit this contest between the enslaving tendency of ancient modes of thought and the inherent independence of the Teutonic character.

I. COSTUMES AND ORNAMENTS.

Unfortunately, we must refrain from entering in detail into the history of the gradual transition and interesting incidents by which, long after the fall of the Empire, the Roman costume became predominant in the regions north of the Alps. We mentioned above (p. 235) the special event that clad Duke Arechis in Roman attire, and this circumstance no doubt to a certain degree estranged him from his people.

Charlemagne, according to the description of Eginhard, wore the simple national garb of his people. In a mosaic preserved in Rome until the last century he appeared exactly like the Frank on Plate 34 (*fig. 12*): the hair-arrangement was that of a Frank, and his legs were enclosed in a garment precisely as described by his private secretary, but the draped tunic and the cloak buttoned on the right shoulder are Roman. He had most probably during an expedition to Italy, which may have been the occasion of the picture, accommodated himself to the custom of that country. We again find essential parts of the same costume in a miniature painting representing the emperor St. Henry II., which we give on Plate 35 (*fig. 1*). But no sooner had the Roman costume gained a hold in the northern countries than their inhabitants began to develop it independently, in accordance with the general tendencies of the age.

The eleventh century was the beginning of a new epoch in the Teutonic world. Paganism had disappeared, and Christianity controlled the minds of men. The old Teutonic nature thirsted as much as ever for action, and it exercised itself, though in a different manner, in this newly-created field. The Crusades were the active expression of this spirit. While the movement excited the highest enthusiasm in the Romance countries, it was the Teutonic nobility here¹ that carried it out.

The ancient Roman pallium was unsuited to the Teutonic character. Even the modern Italian is most nimble with his feet and his tongue, and prefers to keep his arms at rest. It is quite the contrary with the Germans; it was unbearable for them to be compelled to have even the left arm confined under a heavy covering. Accordingly, the first change they made was to fasten the cloak at the neck instead of at the shoulder, thus liberating the left arm. This style is shown in the portrait of the emperor Frederick I. (*fig. 2*).

The women whose means enabled them to follow the fashions—those

¹ *I. e.* the descendants of the Frankish conquerors of Gaul, Belgium, etc.—Ed.

below that station were far more poorly clad during the Middle Ages than in our time—wore as upper garment a cloak which, in the case of royal ladies, was lined with costly furs, as shown in Figure 3 (*pl.* 35). Their taste for display was naturally more pronounced than that of the men. Instead of a simple clasp, as in the case of the men, the women used a ribbon to fasten the cloak, and sometimes both clasp and ribbon. The ribbon was finally worn so long that (as in *fig.* 5) it had to be held with the hand lest the cloak should slip from the shoulders. Beneath the cloak the women usually wore a double dress: one, long and concealing the feet in compliance with court etiquette, was close-fitting above and had long sleeves; the other, worn over this one, was shorter, of a different color, and had wide half-sleeves.

Only toward the end of the thirteenth century was a chemise regularly worn beneath these garments. Gradually the mantle fell into disuse, and it finally disappeared. The greater attention given to the cut and decoration of the other garments proves that the cloak was no longer the chief article of apparel. The cloaks of the two emperors are still decorated with gold borders and ornamented with precious stones, though they are not to be regarded simply as a distinctive mark of the high rank of the wearers. The cloak is much reduced in importance in Figure 4, which represents one of the remarkable sculptures of the cathedral of Naumburg, of the thirteenth century. Eventually, it was used only as a mark of princely dignity, until, after several centuries, it was again adopted in an entirely different shape as a protection against inclement weather.

The attention which had thus far been bestowed on the other garments consisted principally in this, that they underwent a contraction. The change introduced consisted in the diminution of the unwieldy folds of the Roman tunic, with the consequent effect of better displaying the outlines of the body. The male tunic in its original width is shown in Figures 1 and 2; the female tunic in Figure 3, from the monument of Queen Berengaria, spouse of Richard Cœur de Lion, and in Figure 5, from a sculpture in the cathedral of Naumburg.

The ladies lengthened the upper garment, so that it also touched the feet, and the one worn beneath was visible only by its narrow sleeves, for those of the upper dress were widened more and more, so that toward the end of the twelfth century their sack-like ends hung to the ground. When worn by a man the garment (*fig.* 4) fitted closely over the breast; in Figure 6 it is still closer at the top and much shortened at the bottom. We observe a new garment in course of development; the insecurity of its status is manifest from the manifold varieties of form which it at first possessed. In Figure 4 it is sleeveless; in Figure 6, which is copied with a slight change from the monument of Count Ludwig von Hohenlohe, it has short hanging sleeves; as the belt no longer holds the garment, it falls gracefully over the hips, wide and decorated with metal clasps, an object for ornamentation. Noteworthy are the buttons, which occur but rarely

before the middle of the fourteenth century, to which our figure belongs, but which were universally used after that time for fastening the coat at the sleeves and over the breast, where it had been cut open that it might be put on. We observe the same tendency in Figure 7 (*pl.* 35), which represents the dress as close-fitting and fastened at the bosom. In order that the lower dress might be visible, the upper one was drawn up on one side and held by the elbow (*pl.* 44, *fig.* 1)—a custom which made the entire bearing of the women rather constrained. At a much later period the belt was used to hold up the outer robe, thus obviating the inconvenience. The veil and the kerchief about the neck indicate the married woman; maidens had the neck bare and wore their hair hanging loosely.

These fashions did not attain their full development till the second half of the fourteenth century. After the world had recovered from the terrors of the "Black Death" the apparel developed a beauty and splendor such as had not previously been known. While rendering the graceful outlines of the body prominent, the dress at the same time permitted the richest ornamentation, especially the belt and the stripe covering the anterior division on the female attire, both of which were probably decorated with gold-leaf and precious stones. A fine example of the female costume of that period is offered in the monument (which unfortunately is partly destroyed) of the Duchess Catherine, spouse of Duke Rudolph IV. of Austria (*pl.* 35, *fig.* 9). The corresponding male attire, with the so-called "parti-colored coat," which appears in very similar shape as the leather, metal-trimmed hauberk (*Lendner*) in the armor of that period, is shown in Figure 10; it is readily seen that such closely-fitting garments were suitable only to a northern climate. In Italy the fashion of tight garments met but little approbation. Loose clothes of various styles were worn there, an example of which is given in Figure 8, copied from an old Italian painting.

Moralists are wont to chide the present age for its numerous changes of fashion; but every age is characterized by the same variety. In the epoch of which we have been speaking a culminating point in the development of costume had scarcely been reached when changes began to creep in. They first showed themselves in the prominence given to individual parts of the dress. Figure 10 shows the lower border of the coat and the short upper sleeve with a row of wide fringes cut out for ornament. The frivolous taste of the following age occupied itself principally with this sort of ornamentation, and developed the scalloped costume (*Zaddeltracht*), which reached its climax in the second quarter of the fifteenth century. The upper sleeves were lengthened so as to reach the ground, while the scallops were made larger, and even replaced by strips which were also scalloped. Figures 11 and 12 are illustrations of this costume, though not of its most exaggerated form. The tips of the shoes were elongated in keeping with the scallops and sleeves. In Figure 1 the feet are wrapped up in the old manner; in Figure 2 the foot-covering has become a separate article, which can be put on or removed at pleasure.

As soon as the process of uniting pieces of leather by sewing became known, so that a suitable casing might be made in that manner for the lower extremities, greater attention was paid to this part of the dress. Shoes were made of costly material embroidered and decorated with beads and precious stones, as in the costume of the German emperor (*pl.* 49, *figs.* 1, 7). The process of manufacture first employed necessitated pointing at the toes, but toward the close of the fourteenth century the points were unbecomingly elongated (*pl.* 35, *fig.* 11)—less, however, in Germany than in France and England. In the latter countries they were sometimes several feet in length, and were worn turned up in front and even fastened at the knee.

Another peculiarity of the fashion of this period was its attempt to please not only the eye, but also the ear—a thing previously unheard of. Both sexes attached small bells to their clothing wherever it was feasible, particularly at the belt (*fig.* 11), and also on bandoleers, which were worn over the shoulder especially for that purpose.

Now that fashion had replaced the former scant and tight apparel by the opposite extremes of fulness and drapery, the parti-colored coat and the corresponding article of female attire were done away with. Figure 12 shows a shape which is found underlying almost all subsequent styles: the skirt is gathered at the hips and ends in a long train behind. All efforts of state and civic authorities to regulate the extravagances of taste were fruitless. Fashion prevailed against all prohibitions, until at length exorbitant fancy exhausted itself and moderation again prevailed. In Germany there was a steady return to simplicity; and this tendency also ran into extremes. Toward the close of the century the costume, especially of the men, had so shrunk in dimensions that another change became necessary. At that time the dress of young people differed much more from that of graver elders than is now the case. The young people were also the leaders of fashion to a greater extent than they are to-day. We may here note the difference between the comfortable and becoming dress of the well-to-do burgher (*fig.* 15), with his fur-trimmed smock-coat, and the fantastic costume of Philip the Good of Burgundy (*fig.* 13), which, however, belongs to a somewhat earlier period.

In some countries, especially among the rich and luxurious subjects of the house of Burgundy, the old tendency to exaggerated forms in costume survived, and at the wanton and extravagant courts it displayed itself in the most grotesque shapes. It would lead us too far to describe in detail these various styles. The costly Genoese velvets, the gold brocades, the fine furs, the towering caps, and the long trains of the ladies (*fig.* 14), the veil-like decorations (*Sendelbinden*) of the men (*fig.* 13), and the long-pointed or stilt-like overshoes worn by both sexes over their silk shoes, were scarcely known in the poorer regions across the Rhine.

The opening of the sixteenth century found a most uncomfortable costume in use. If ever the mood of a period was manifest in its apparel, it was toward the close of the fifteenth century. It was a time of pro-

found discontent. Men felt that the old foundations had become decayed; hitherto-accepted views of life were no longer tenable. No substitute seemed at hand. In like manner, the costume was felt to be in the highest degree unsuitable. The shoes, fitting loosely, tripped the wearer by their long points; the breeches were tight, and, being but loosely fastened to the jacket, were liable to displacement by unguarded movements; the jacket itself was excessively shortened, being cut low on the breast and at the back, so that it did not have a good hold on the body; the breast was insufficiently covered with a stomacher; the neck was bare; the back was burdened rather than protected by a short cloak or frock. Glaring colors were contrasted in the same dress, one arm, for example, being green and the other red; one leg yellow, decorated with black stripes, and the other blue.

During the last ten years of the fifteenth century the shoe-points had been discarded and the narrow sleeves had been slashed at the elbow. This same fashion had been imitated at the knees of the pantaloons. Plate 36 (*fig. 2*) shows the prevalent style up to and after the year 1510. It represents a student in the attire of a dandy. Figure 1 is the academic attire worn by the learned, and prescribed, though often unavailingly, by the statutes of the universities. Figure 3, copied from an old painting, represents a young couple in attendance at a patrician ball in Nuremberg about 1510: the lady wears a light-yellow dress with black trimmings, and the low-cut neck is in accordance with the fashion of the day; the bodice is made of fine linen embroidered with gold; the sleeves are slashed on the shoulder and the elbow and filled out with puffs of linen.

The first twenty years of the sixteenth century had hardly passed when it seemed as if the earth was peopled by a new race, whose bustling activity, self-assurance, and exuberant joy were in strong contrast to the spirit of the preceding century. The invention of printing opened the world of intellect to all: from distant and newly-discovered regions of the globe came wonderful narrations which widened the views of men; the Renaissance introduced higher standards for all the circumstances of life; important inventions multiplied and rendered accessible the means of existence; and the Reformation restored to the people their old vitality. The distinctive article of apparel of this period is the cloak (*Schaube*), perhaps the most complete achievement of the tailor's art, at once appropriate and comfortable, becoming and pliant, suitable for summer as well as for winter. Its earliest form is shown in Figure 3, its perfected form in Figure 4, with its wide fur trimmings as worn by senators and noblemen during the first half of the sixteenth century. The cap (*Baret*) suited the cloak; it was a velvet head-covering (*figs. 3-5*), of various forms and well adapted for all sorts of decorations; both sexes wore it almost alike.

The pointed shoes underwent a complete transformation: they were henceforth worn quite broad at the toes (*fig. 4*), as if man wished to tread upon as much as possible of the newly-won soil. Special appliances were necessary to hold them in place, since they were made far too large.

They were fastened to the foot by means of a closely-fitting shoe concealed within the more roomy outer one, or by a strap tied across the foot, or they were even sewed to the lower edge of the hose. The costume of the men was completed by a dagger and rapier. The ladies sometimes carried a small dagger also, but it is not recorded that they ever made a bloody use of it.

It may here be mentioned that certain of the patrician families of the German imperial cities enjoyed the privilege of arraying their daughters on the occasion of their marriage processions as "crown brides"—that is to say, with princely adornments—and, naturally, no effort was spared to make such a display as should testify to their exalted position. Figure 5 (*pl.* 36), copied from an engraving by Hans Sebald Beham, one of the best engravers of that time, shows the magnificence of the costume. This will be more evident if we remember that the dark lines of the engraving represent variously-colored silks and velvets. This commendable mode did not escape the fate of all other fashions: it was exaggerated and carried to an extreme, one or another detail being developed and made prominent, until the proportions of the whole were distorted. The slashes on the shoulder, elbow, and knee, which at first had been made for comfort, were lengthened along the upper arm and leg, and the openings were filled out with fine linen or gay materials. These were gradually puffed out more and more, until the bag-trousers or "trunk-hose" (of which Figure 6 is not an exaggerated specimen) was the result. It is said that as many as forty or even a hundred yards of lining, besides other material, were used in a single garment. The lansquenets were the leaders in this style. Laws and sermons were powerless against it: people clung to the fashion until they became tired of it, when they discarded it more rapidly than they had taken it up.

At this point the inventive faculty of the Germans seems to have become exhausted; the regulation of fashions passed to foreign nations, with whom it has remained down to the present. In truth, the minds of men were occupied with more important matters. The division of the Church, though fully accomplished, entailed unforeseen dangers which greatly imperilled Germany during the early part of the following century; and the people willingly followed the foreign lead which gratified their desire for change.

The Spaniards, who had attained under Charles V. a foothold in the North, became the arbiters of fashion. They, like the Romance nations generally, had not given as much play to the vagaries of fashion as the Germans. Instead of the expansive styles adopted by the latter, they preferred a courtly trimness and closeness. The German costume was full and flowing; that of the Spaniards was stiff and straight. They wore the slashes on the jacket and hose, and even on the shoes (*figs.* 9, 10), not for ease of movement, but in order to increase the splendor of the costume by the trimming of the edges and by the use of underlying variously colored stuffs.

The cloak (*Schaube*) was transformed into a small loose sack with stiff projecting collar and wide sleeves. The cap was enlarged into the shape of a hat by a wire or pasteboard inside. The so-called "goose-belly," or peaked stomacher, became the fashion for the jacket by padding it and carrying it down in front to a peak (*pl.* 36, *fig.* 9.). The hose, cut essentially like the German article, was stiffly padded and covered with its puffs only the upper part of the thigh. Such was the Spanish costume, which was long used in the theatre and was known as the Old German. In Germany, however, it never extended beyond court circles.

Figures 7 and 8 show the reaction which took place against the trunk hose and padded garments among the lower ranks: the lady exhibits the stiffness of the female style of dress in the small cap, the standing fur collar, the high shoulder-puffs, and the straight pleats of the skirts. For the first time the crinoline appears, under the name of *vertugalla* (*figs.* 10, 11)—a foreign mode, but one soon introduced into Germany. Plate 37 (*fig.* 1) shows its extremely ungraceful form in Northern countries.

Before we follow the progress of the styles in Western Europe we turn for a moment to the East, where Byzantine influences were still at work. If we bear in mind the Russian costume (*pl.* 34, *fig.* 8), we can easily account for the styles shown on Plate 36 (*figs.* 12-14). Among the Russians the cloak and jacket had become united in the caftan. The head-covering has remained the same, and is still worn in the same manner by the lower classes. The high leather boots with bright decorations were introduced from Asia. Although Herodotus speaks of them as worn by the peoples living south-east of the Euxine, we meet with the first representations of them on the equestrian pictures of the Sassanide kings (*pl.* 28, *fig.* 18). They were perhaps brought to those regions by the conquering Mongolians, who, as is known, long held sway in Russia.

Among the Turks, too, who for a century had been the masters of ancient Byzantium, we perceive the same articles of clothing. The Turk, completely as he had done away with everything that savored of Greek civilization, did not disdain to adopt external comforts of life from the peoples he had subjugated. The dwelling of to-day in the entire East, with its system of building around a court, is in its arrangement simply a continuation of the Old Greek style combined with Moorish forms of architecture.

As an entirely national remembrance of his Asiatic origin the Turk clung fast to the turban (*pl.* 36, *fig.* 13), which he had designated for himself as a sign of his race upon his very tombstone, and which he never bestowed upon any of his subject peoples. To the latter belonged, during the period under consideration, the Hungarians, in whose costume (*fig.* 12), besides a few European additions, Oriental elements are very easily recognizable. The costume which the modern Hungarians prize so highly as a thoroughly national one is in its origin simply a legacy from their former masters and enemies.

The heroic struggle by which the Netherlanders freed themselves

from Spanish dominion attracted the attention of all Europe, and as a sort of recognition various fashions were named after them, although they may not have originated the styles. While fighting against their cruel oppressors the Hollanders wore the Spanish costume, and they did not throw it off with the Spanish yoke. The crinoline shown on Plate 37 (*fig. 1*) was called the "Dutch hoop-skirt," although it had been used earlier in other countries, especially in France.

In Figure 2 the Spanish costume can be easily recognized, though in a roomier, lighter, and more flexible form. An essential difference which has been influential to the present time is to be noticed in the separation into two parts of the covering for the legs. The proper apparel for the lower extremities consisted henceforth of two separate garments meeting at the knee—namely, knee-breeches and stockings. This style is exactly shown on Plate 36 (*fig. 7*).

The remark which some one has made that the introduction of the crinoline was always followed by great wars seems verified, at least in the case of the Germans. But the fact is, that in lands where this fashion took root the mind was cramped, and its struggles, expanding not only politics, but also costume, gave to the hampered peoples on the one hand a new fashion, and on the other hand let loose the terrors of war. The crinoline seemed to have disappeared after the Thirty Years' War, not, however, because of that war, but through the influence of the frivolous court of Louis XIII., which supplanted the Spaniards in the regulation of fashions.

The muddy streets of Paris—which is designated as the "mud-city" by its Latin name, *Lutetia Parisiorum*—necessitated the wearing by the ladies of high-heeled overshoes, and by the gentlemen of boots (*pl. 37, fig. 3*), which were provided with spurs, and which had previously been confined to the costume of the horsemen. The gay society which sauntered in careless elegance before the shops of the Palais Richelieu (the later Palais Royal) in Paris began, though unconsciously at first, to dictate to the world what should be considered proper in dress and etiquette.

Germany, in spite of the war which waged furiously throughout the land, and notwithstanding sarcasm and caricature, faithfully imitated the French models. The new mode recommended itself first of all by its cut, which conformed to the natural shape of the body. In addition, it found favor by reason of its pleasing ornamentation, which gratified the taste for minor articles of apparel, such as gayly-colored fans, gloves expanded at the wrist, embroidered handkerchiefs, lace collars and cuffs, rosettes, loops, bows, and ribbons, which, along with the use of jewelry proper, effected a decided change in the appearance of the costume. This change resulted in the style of dress worn by Louis XIV. and his queen (*fig. 4*), who were the leaders of fashion during the latter half of the seventeenth century and a part of the eighteenth. It consisted almost entirely of lace, bows, etc., and was as puffy as the Old German and as stiff as the Spanish costume. But before the close of the century this costume, as

costly as it was cumbersome, was discarded. It had never been adopted by the citizen class, and it had crossed the Rhine only in a very modified form. It was simplified by abolishing puffs (though in accordance with the spirit of the age it retained its stiffness) and by the substitution of solid decorations, generally gold fringes (*pl.* 37, *fig.* 5), for its light frippery. This figure shows the coat and vest which have remained ever since in use, though they often changed in shape and color. Their origin is briefly as follows:

The heavy German sack-cloak which the respectable burgher always put on, and not merely threw over his shoulders, about the beginning of the sixteenth century had to be made smaller in order to take the place of the small Spanish mantle. In this shape it was worn about the shoulders with the sleeves hanging loosely. But as the cold northern climate required a more closely-fitting garb, the arms were finally put through the sleeve-openings and a pair of sham sleeves attached to the garment. With this provision the garment could be gathered more tightly about the body. The arms themselves were covered by the sleeves of the under-jacket, which was generally made of fine material or of silk. The outer garment was gradually made narrower and more closely fitting, and finally the sleeves of the under-jacket were transferred to it, the flaps at the back being discarded. The sleeves were at first wide, slashed in the upper part, and puffed with linen, fastened at the wrists, and having cuffs that turned back. Finally, they were made narrow and entirely closed, and with large cuffs from which laces peeped forth. That was the coat; the lower jacket became the sleeveless vest. Shoes were again worn in place of boots.

The stiffness which characterized the male attire was imparted to that of the women (*fig.* 6) by a tight corset which extended downward. The straight skirts which were worn about the middle of the seventeenth century had rendered several of the under-garments unnecessary. But for suitable covering two principal garments were used, the upper one being open in front so as to display the lower one. The aperture was gradually widened and the upper garment drawn back and looped behind. Thus originated the trail, from which the train was developed anew. Figures 3, 4, and 6 illustrate this costume. A strong opposition was aroused against it, especially on the part of the older women of the German cities, who were unwilling to follow foreign leadership, and who thought it patriotic to imitate the old and, as they thought, national costumes. The only result of their opposition was to leave them behind the fashion.

The same was the case with the official uniforms, which originated about a century earlier. In these also only antecedent styles were retained, without any connection with a real historical origin. For example, the senator of Nuremberg (*fig.* 7) in the year 1700 claimed to be wearing the genuine historical *Schaube*. As a matter of fact, his garb consisted of the latter article united with the shoulder-ornament of a much later period and with the large cuffs of his own time.

Coats and vests became constantly smaller, as evidenced by Figures 8 to 11 (*pl.* 37). During the eighteenth century the gold borders were exchanged for gay silk embroideries, which in the beginning of the present century gave place to embroideries of gold, though considerably diminished in size. Of course such costly adornment could be indulged in by the wealthy alone, and finally its use was confined to gala coats and uniforms. The vests, however, retained their embroidery for some length of time. For both of these garments light-colored materials were preferred up to the second decade of this century, and even down to the close of the last century costly materials, such as heavy silks, figured velvets, etc., were used. At a still earlier period silk damask was in great favor.

As the coat became narrower it was divided behind. In order to march more freely the soldiers turned back the lower end and buttoned the points together. Later on the points were sewed back and converted into the differently colored "revers" of the coat-tails which the older of our contemporaries may remember to have seen worn by subordinate officials of the civil service. By cutting away these "revers" altogether the dress coat was formed. Before and during the French Revolution this style of coat was the suspected costume of the friends of liberty; but afterward it became the garment of festival and ceremony.

From the end of the seventeenth to the middle of the eighteenth century the stockings were drawn up over the knee-breeches (*figs.* 5, 8), and later on underneath them (*figs.* 9-11). The crinoline was again adopted by the women (*fig.* 8), and about the year 1780 it reached the inordinate circumference shown in Figure 9. The French Revolution put an end to it, and created a female costume (*fig.* 10) which was intended to be as shapeless as possible, and which ended in the ridiculous attempt to imitate the ancient Greek costume in the North (*fig.* 12)—a fashion that cost many a woman her life: for considerations of health it had finally to be discarded. Since that time our own generation has seen a similar cycle of changes in fashion; and what we have thus far said, together with our own experience, enables us to appreciate the importance of fashion as an element of social development.

Plate 38 presents a view of the neck-wear and head- and hair-dresses which were in use from 1500 A. D. to 1800 A. D. We add a few explanatory words. Of course before the first-mentioned date the neck had been protected against the weather by a covering of some sort: *capuchins*, loose cloths, etc. were used for that purpose. But it was just at that period that a special neck-covering originated, although perhaps the neck was never more exposed than then.

Neck-wear.—The linen waist worn beneath the low-cut bodice was, as we have already said (*p.* 242), supplied with an embroidered hem, which was often of considerable width and decorated with gold threads, beads, etc. (*fig.* 2). Sometimes it was finished off with a narrow, finely-gathered edging (*fig.* 1). When the jacket was worn closed this edging or hem was drawn up about the neck, and, gradually becoming broader

(*pl.* 38, *fig.* 4), developed into a collar. The jacket and dress were also supplied with a close-fitting collar, which confined the frill about the neck and cheeks (*figs.* 5, 6). The frill gradually expanded into the large ruff or "wheel collar" (*fig.* 7) which was in use at the close of the sixteenth century, and which long formed part of the official costume. Remains of it are still seen in the ritual garb of some Protestant divines. It was worn also by women, and was retained by the elder matrons, who naturally rebelled against later innovations. When the ruff could not possibly be made larger, its shape was changed and the most grotesque forms were introduced, like that, for example, shown in the portrait of Queen Elizabeth of England (*fig.* 8).

As a further decoration lace was substituted for the troublesome linen plaitings. The linen was retained, but not plaited, and it constituted the collar proper. At first it stood erect (*figs.* 9, 10), but later on fell over on the shoulders (*fig.* 11). At first it was broad, such as we see it in portraits of Gustavus Adolphus of Sweden, but afterward it was diminished in size (*figs.* 13, 14), and finally was replaced by the neckerchief (*figs.* 16, 18) introduced from France. When this kerchief in turn became small, the collar reappeared in the form known in Germany as the "parricide."¹ But the real remains of the ancient collar are the bands worn by the Protestant clergy.

Hair and Beard.—The arrangement of both hair and beard stood in close connection with the style of collar worn. The fashions of the Middle Ages in this regard were in direct contrast to the old Germanic usages. The Crusaders who conquered the holy places did not wear beards. Duke Henry the Lion appears smooth-faced on his monument, and the same is true of other heroes of those times, of whose appearance the romantic poetry has given us a far different description. The hair was cut in the so-called "bangs" fashion—that is, fringed short about the forehead—and worn moderately long about the rest of the head. This fashion endured until the middle of the sixteenth century, when the practice of wearing the beard according to the individual fancy was also indulged in. The long hair of Albrecht Dürer (*fig.* 1) formed an exception to the prevailing fashion.

The emperor Charles V. with his Spanish following first introduced into Germany the custom of wearing the beard long. But men soon began to trim it—about the cheeks first, where the projecting frill hindered its growth (*fig.* 7). Then the cheeks were cleanly shaven (*fig.* 9), which became the universal style up to the middle of the Thirty Years' War; the beard was also cut short on the upper lip and chin (*figs.* 13, 16) until about 1700, when it disappeared. To accommodate the frill and the collar the hair of the head was also cut short (*figs.* 7, 9, 10). The taste of the seventeenth century forbade the use of the shears upon the hair:

¹ *Vatermörder*: the high stiff collar with projecting pointed ends, one of which, according to the story from which the name was derived, pierced the eye of an affectionate father when embracing his son just returned from the university.—ED.

when it became so abundant as to be troublesome, it was cut off at the shoulders and permitted to grow long only at one side. Dandies even made a plait of it on this side, to which they fastened bows and beads (*pl.* 37, *fig.* 3).

The mania for full long hair was so great that false hair was used when Nature's supply was deemed insufficient. This was the origin of the wig, which at first was only an imitation of the natural hair (*pl.* 38, *fig.* 16), but presently, about 1690, grew into the mighty allonge wig (*fig.* 18), which erected a high mountain of curls on either side of the head and descended in a stream of frizzled hair. After the year 1700 the wig (*fig.* 20) became narrower on all sides; a flat space was left along the crown, which continually became broader, and finally to such an extent as to give a flat appearance to the top of the head (*fig.* 21). The wig had now become so small that it could often be constructed out of the natural supply of hair; this was accordingly done wherever there was enough. The style now consisted in the use of one or more curls at each side of the head, the hair of the forehead being brushed back and either gathered into a bag (*fig.* 22) at the back, according to the French style, or, as was more customary in Germany, made into a braid (*fig.* 23). Later, the wig fell altogether into disuse, and the fashion of powdering the hair (*figs.* 21-23) was introduced.

During the sixteenth century the women wore the hair in braids, at first wound about the head (*fig.* 2); sometimes they covered it with an embroidered net or one made of gold threads (*fig.* 6); but toward the end of the century they allowed the braid to hang down. After the introduction of the Spanish fashion the women of the nobility sought, though perhaps less in Germany than in other countries, to imitate, or even to surpass, the fashions of the men, and they frequently succeeded in the attempt. The hair (*pl.* 36, *figs.* 10, 11) was at first brushed straight back from the face, then turned up in curls (*pl.* 37, *fig.* 1), and decorated according to the individual's rank and wealth with rich ornaments (*pl.* 38, *fig.* 8). When the men wore their hair hanging down, the women did the same, and light, natural curls fell (*fig.* 12) on the shoulders. The curls, however, constantly became more artistic (*fig.* 17), and finally, with some resemblance to the wig, were gathered on the top (*fig.* 19).

When it became fashionable for gentlemen to powder the hair the ladies adopted the same custom (*fig.* 24), continuing in other respects also to imitate the attire of the men. But on festive occasions, balls, etc., the *toupet* that had been formed of these towers of curls grew into awful structures, a moderate example of which is given in Figure 9 (*pl.* 37). It was the guillotine that assisted in checking the degenerate tastes of the age: it did this, however, by suppressing all outward manifestations of taste. At the same time it had become so customary to look to Paris for fashions that even the disordered hair (*fig.* 10) of the viragos of the Revolution became the vogue among the Germans.

Head-dress.—The cowl or capuchin belonged in the thirteenth cen-

tury to the costume of serving-men and to that of the common people generally. After that it was made part of the hunting costume, and was thus introduced into higher society. At the beginning of the fourteenth century it was in universal use, and for a long time it took the place of every other covering for the head, both for ladies and for gentlemen.

We have already mentioned (p. 242) the principal head-covering of the sixteenth century. The *Barcl*, at first a rather shapeless cap (*pl.* 38, *fig.* 1), was, without much variation, worn by both men and women; its place was next taken by a sort of flat cap (*fig.* 4) with broad rim cut in at various places, changeable in form, and generally black, which color was also retained at a later period. The rim became narrower, the cap smaller (*fig.* 5), and the whole stiffened, until finally nothing but a small lid pinned to the hair (*fig.* 6) remained as the head-dress for women. Scholars and clergymen developed a special *Baret*, which was higher than the one in general use, and also very stiff.

Toward the end of the sixteenth century the hat, which had occasionally been worn in the early part of that century, came into general use among men. At first it was of a cylindrical shape, with a very narrow rim, and seems to have been made mostly of felt. People of rank wore it with a covering of silk plush. Later in the century it was worn pointed at the top, its rim became broader, and it was stiffened by means of a wire structure which was covered with black camelot. In this shape it became part of the official costume of the senators of Nuremberg (*pl.* 37, *fig.* 7). The abandonment of all stiffness in dress affected the head-covering as well, and brought forth the well-known hat of the Thirty Years' War (*pl.* 38, *fig.* 11), which had a narrow crown and a broad rim turned up on one side. In the preceding century the hat had been ornamented with a costly clasp of precious metals or stones, but waving ostrich-plumes were most becoming to its new style (*pl.* 37, *fig.* 3). The feathers became more numerous in the second half of the seventeenth century, although the hat had decreased in size (*fig.* 4), and when it had again grown larger and stiffer it was transformed into the well-known "plumage hat" (*fig.* 5), the rim being turned up on three sides.

The allonge wig (*pl.* 38, *fig.* 18) enabled its wearer to dispense with the hat as superfluous. Even after that wig had disappeared, the hat was carried under the arm when the head was dressed; it gradually diminished in size, and finally it lost its plumes also (*pl.* 37, *figs.* 8-10). Once again, toward the end of the eighteenth century, an attempt was made to restore not the bold form in vogue at an earlier period, but the ample dimensions, and those grotesque, galoon-trimmed hats were invented which we occasionally see, though in smaller size, as part of military uniforms.

The French fashion had deprived the ladies of the *Baret* without giving them any substitute. The attempt to introduce the pointed hat of the men failed; for a long time the women contented themselves with a kerchief (*fig.* 3), a veil, or ornaments only (*pl.* 38, *fig.* 12). Then there

arose on the heads of the ladies of the court of Louis XIV. the mighty *fontange* (*pl.* 37, *fig.* 6), the ancestress of all female caps down to our times—a structure of laces and black or colored ribbons which reached its full development about the year 1700, then sank until 1720, but served as the foundation of the lace caps (*figs.* 8, 10) which were developed in various shapes in all countries. Even the lady's hat of to-day originated in the *fontange*, for in the beginning of this century the caps were made of gayly-colored silk materials stiffened with wires. The small edge that first surrounded them was soon enlarged into a broad rim, and instead of the wire frame platted straw was used—a change which led to a variety of new shapes.

Besides the general fashions, we meet at all times with female head-coverings peculiar to certain districts. Thus the married women of Nuremberg wore about the year 1500 a stiff linen cap over a wire frame (*pl.* 38, *fig.* 3), which seems to have been the last remains of the mediæval veil. In the seventeenth century we find in the cities of South Germany a fur cap (*fig.* 14), which has been preserved to this day in some districts of Lower Bavaria. Among other head-dresses the matrons of Nuremberg wore a peculiar cap (*fig.* 15) which was entirely hung with gold-plated pieces of metal.

Ornaments.—Of jewelry proper we shall say but little, as such articles were too numerous and too multiform to allow a full description. In general it was as much prized by both sexes during the Middle Ages as at any subsequent time. During the period when as yet there was no real head-covering young men and maidens were accustomed to wear decorated hoops and bands in their hair (*pl.* 35, *fig.* 12). The clasps of the cloaks worn by the men especially gave opportunity for ornamentation. The same was true of the broad belts in fashion during the fourteenth century. Finger-rings were so high in favor with both men and women that they were even worn on the thumb. Amulets were fastened to the necklaces, and, being set in gold and silver, they soon became ornamental objects. The sixteenth century was the most extravagant in regard to jewelry. Heavy chains were worn about the neck and shoulder by rich persons of both sexes. Princes showed their favor by the presentation of "chains of grace" with medallions attached. The men decorated above all the hangings and handles of their weapons, and the women bestowed equal care upon the ornamented belt-hooks on which they carried bags, keys, etc., which often hung down on the dress.

In the more sober seventeenth century the use of jewelry was somewhat diminished, but greater luxury than ever prevailed in the use of fine laces. The eighteenth century again adopted jewelry, but, as it was worn principally in the evening and on festive occasions, when it could not be critically examined, more attention was bestowed upon mere glitter than upon real worth, while in the sixteenth century the latter had been the chief consideration.

2. ARCHITECTURE.

Monastic Buildings.—The dwelling in those regions which we have just been considering also derived its form from Roman models. A remarkable plan of the cloister of St. Gall, which was erected during the Carlovingian period, has descended to our day: this plan, which is represented on a reduced scale on Plate 39 (*fig. 1*), distinctly testifies to its Roman origin. At the same time, it shows us a small, systematically laid-out city, with its churches, schools, official residences, hostelries, industrial establishments, etc.; it represents in addition the interior arrangements of the houses, at least in their general features. The most considerable consist of several apartments, disposed similarly to those of the Roman abode in that the well-lighted main building is surrounded by small dark chambers. Antechambers or halls and upper stories also occur. Kitchen, dining- and storage-rooms, apartments for servants, bath-rooms, etc., which since that time have been united under one roof, are still, however, in accordance with ancient Teutonic usage, located in separate buildings. Occasionally such individual parts of a dwelling are united by covered walks, but even in such cases each has its own place of exit, without any organic connection with the rest.

The dwelling of the abbot (No. 3) consisted of two buildings, which, like the other establishments, were separated from the rest by a fence, and are known only from the description attached to constitute a single homestead. The special place of abode of the abbot himself is divided into a sitting-room and a bed-chamber; the latter contains several beds, besides that of the abbot, for the accommodation of guests. Each apartment contains an arrangement for heating the room—whether stove or fireplace cannot be decided from the drawing.

As additional advantages this house possessed a second story, and an arcade which extended along both sides, but probably did not reach higher than the top of the lower story. Light was admitted, as in the Roman dwelling, through an opening in the roof; where additional stories rendered this impossible the opening for the door served this purpose. The opening in the roof, indeed, was an advantage not possessed by the lesser buildings; for example, the dwelling-places of the servants. To keep out the rain the opening was protected by the well-known “tortoise-shell” (p. 207). Only in those chambers in which monks were busy transcribing manuscripts were there windows—probably simple openings in the wall—to which attention is called in the marginal notes on the original plan. The roofs were nearly flat; already, however, so constructed as to shed the rain toward the outside.

In the guest-house for the reception of the nobility we find a hall-like passage (No. 7), which led into a spacious apartment serving both as a reception- and a dining-room, in the centre of which a large cooking-hearth was situated. Four sleeping-rooms, capable of being heated, chambers for the servants, and stables for the horses abutted on the side

of the principal edifice. A special kitchen, bakery, brewery, etc., which are also seen repeated in other parts of the cloister, were placed at some distance (No. 12). Besides this division, there was another for the accommodation of poorer travellers and pilgrims, more simply fitted up, and a place of sojourn for travelling monks, containing beds and sleeping apartments; this latter (No. 8) was close to the principal church (No. 1).

No. 2 shows the cells of the monks; No. 4, schools for the children of the laity: these apartments, illuminated from above, consisted of two large school-rooms and twelve surrounding studies. No. 5 indicates the position of the chapel of the novices; to the right are dwellings and school-rooms for this class of inmates, while on the left side were situated the infirmary and physician's apartments.

The space indicated by a cross was the cemetery, in which ornamental and useful trees were planted; on the right side, and extending as far as the cemetery, were the kitchen-gardens, the gardener's dwelling, and the poultry-yard. No. 9 shows a large structure containing the barn, drying-room, and mill. No. 10 indicates a series of stalls for domestic animals, and also bed-chambers for their keepers. No. 11 represents a similar building for the accommodation of mechanics. The cellar, indicated by two rows of large and small casks, was situated immediately beneath the cells. Underneath the rest of the buildings was placed a library, with the above-mentioned copyists' rooms, the dwellings of the porter, the almoner, etc.

As we can easily see, this was not a simple cloister in the ordinary sense, but rather one of those great seats of civilization which during the early Middle Ages kept alive and spread abroad whatever culture existed in the world. Such an establishment embraced a completely organized social system, and we must think of the region immediately surrounding it as occupied and cultivated by settlers who sought the protection or instruction thus afforded, and of the country beyond as consisting of interminable wildernesses penetrated at wide intervals by high-roads, which here and there passed some nobleman's castle or an imperial domain, and which led to the cities along the Rhine, to those south of the Danube, or to whatever others owed their origin to ancient Roman colonies.

Under the shadow of the castles and palaces we find the villages of the peasants, who had already begun to give up their liberty in order to enjoy protection against the numerous freebooters. Houses of stone occasionally occurred on the imperial demesnes. The castles still consisted of wood and were surrounded by a fence; they were usually constructed on heights, but if no such favorable site could be had, a place surrounded by water, or even a marshy district, was selected.

Castles.—We shall not undertake to trace the growth of these establishments. In the eleventh century the principal edifices and fortifications were constructed of stone; in the thirteenth and fourteenth centuries their peculiar characteristics were fully developed. The Wartburg (*pl.* 39, *fig.*

4), recently so admirably reconstructed according to the original plan, serves as an excellent example of the architecture employed in the more important castles.

The main building of every castle and the real dwelling of its lord was the *Palas*, a term of the same origin as our word palace. It was therefore more solidly built and more richly elaborated, and generally an entire story was occupied by a large banquet-hall (No. 1 in our plan). Entirely separated from the abode of her husband, in accordance with old Teutonic custom, was the *Kemenate* (derived from *caminus*, a furnace, and so called from its possessing a heating apparatus), the dwelling of the lady of the castle and her immediate attendants, the most favored of whom were permitted to share the apartment of their mistress, and hence these attendants were called collectively the "women's chamber" (*Frauenzimmer*)¹ (No. 2). The Wartburg contained another house (No. 5), provided with a heater; this house, called the *Dirnitz*, was reserved for the landgrave; it was built by Frederick the Bitten in 1319 on the site of the ancient chapel, which he had removed to the *Palas*.

Originally, the defences of a castle consisted, besides the foundation-walls, only of the so-called *Bergfrid*. This was perhaps at first, as the name indicates, merely a strong enclosure, but afterward developed into a tower accessible only from the first story, in which, as well as in its upper stories, means of defence were provided. The last spot of refuge for the besieged lay in the entirely enclosed ground-floor, beneath which were the dungeons. In the Wartburg this tower (No. 6) is united to the *Kemenate*, but the latter is easily recognized as a later addition. Another tower (No. 8) was erected on the south side of this large castle.

The entrance constituted an equally essential part of the defences. It generally consisted of an outer and an inner gate, which in the more complete structures were each flanked by side-towers provided with a strong portcullis and approached by a drawbridge. No. 4 marks the position of the inner gate between the *Dirnitz* and the *Kemenate*; the drawbridge of the outer one is at No. 16. The space between the two gates, enclosed in every case by walls of its own, served in time of war to shelter the retainers of the castle; in time of peace it was either cultivated or used as a pleasure-ground.

In the Wartburg a part of the outer court was occupied by the so-called "knights' house" (No. 3), intended for the entertainment of guests, and by servants' quarters (No. 11). The stables (No. 10) stood opposite the *Palas* in the inner court. Visitors usually rode up to the stairs of the banquet-hall, where grooms took charge of their horses. No. 9 indicates the cistern; No. 7, a third court, formed by two walls extending from the cistern: a bath-house, with which all superior houses were supplied, was connected with the *Palas*. No. 12, we may remark, is the room famous as having been the abode of Luther.

¹ Hence, too, of course, the curious but common use of the word in the signification of "lady" or "gentlewoman."—ED.

The Wartburg, though constructed on a far larger scale than the old feudal castle, displays the same characteristics in its ground-plan (*pl.* 39, *fig.* 4). An interesting parallel is furnished by the imperial castle of Nuremberg (*fig.* 2), the first foundation of which dates from the eleventh century. No. 1 designates the castle proper, which was built on a rocky eminence. The principal part of the extreme left, corresponding to the *Palas*, was the residence of the emperor during his visits to Nuremberg; the wings, which were added later, were occupied by the castellan and the imperial prefect. No. 2 is a deep well in the fore-court. No. 4 is a double chapel, probably built by Frederick I., which is most interesting as a piece of architecture. Adjoining it is a tower (No. 12), which, from a misinterpretation of its decorations, has been called the "pagan tower" (*Heidenthurm*).

The castle of the burgraves of the city (No. 24) stood in close contact with the imperial castle, and protected it. It was characteristic of that age that the noble families, clinging to the emperor like parasites, should erect castles even at his place of temporary sojourn and claim the privilege of guarding individual parts of his abode—a single gate (No. 16), for example. These lesser castles have long since been swallowed up by the extension of the underlying industrial city. Thus Colditz, Brauneck, Viehbeck, and other families had castles (Nos. 13, 14, 15, 19) on the same hill as the emperor's, but the remains can now hardly be traced.

No. 10 marks the position of the imperial stables; No. 22, the avenue of approach, which derived its name from the mercenary troops (*Söldner*) who patrolled it; No. 12 is the house of the captain of these soldiers; No. 9 is the courtyard of the castle of the Zollern family, who afterward, when they had risen from the rank of royal counts to that of imperial princes, migrated to the neighboring Kadolzburg. The increasing number of inhabitants in the castle necessitated a larger chapel, which was accordingly built in the year 1428 (No. 8). It still exists as the famous "Walpurgis Chapel." Figure 3 shows the original appearance of the castle and its evident purpose as a fortress.

Fortified Cities.—The sites of almost all German cities were chosen on account of their fitness for easy defence; this circumstance explains the fact that so few large cities possess attractive natural surroundings. The seats of the clergy form almost the only exception. The invasions of the Magyars and Avars led to the general founding of cities. The Avars settled in some districts of South-eastern Bavaria, where their descendants, almost pure in blood, though they have lost their original tongue, still live and determine the character of the population. But some cities originated later, though from similar causes. Such was the case with Nuremberg, a plan of which is given in Figure 5.

In order to check the inroads of the Slavs, a chain of forts and castles was built in the eleventh century from the Main to the Danube. These were garrisoned by Frankish settlers, the ancestors of the later Frankish nobility. Around these fortresses settlements were established in strong positions by Frankish immigrants the descendants of whom differ even

yet from their Slavic neighbors, though both have lost all knowledge of their diverse origin.

A sandstone eminence standing alone in the midst of the extensive pine forests which fringe the lower course of the Pegnitz River was considered a suitable place for one of these fortresses (*pl.* 39, *fig.* 3). A watch-tower (No. 5, *fig.* 2) was built on the projecting ledge, the accidental form of which gave it its pentagonal shape and the name of the "Five-cornered Tower" which it still bears. Under its protection some fishermen probably erected their huts on a few islands of the river; bee-keepers, who pursued their industry on the neighboring heaths, also settled there; and finally, mechanics who found employment in the small colony. Such was the origin of Nuremberg. The almost complete sterility of the soil compelled the young settlement to devote itself entirely to industrial and commercial pursuits, which advanced it so quickly above the agricultural settlements of the upper Pegnitz that it was granted civic privileges by Henry III., who probably had founded the castle.

The shape of Nuremberg is oblong (*fig.* 5), the river intersecting its shorter diameter. By the position of the churches and convents we can determine pretty accurately its extent and boundaries at the time the clergy considered it worth while to settle there. The town extended rapidly over both sides of the river, and was several times compelled to enlarge the circuit of its walls. The old walls on the left bank of the river can be distinctly traced on our plan, and just within them we observe an arrangement peculiar to ancient cities, which were, as we have said, constructed chiefly for security and defence. From the gates in the walls two streets diverged into the city, so that an enemy would be compelled, as soon as he had made an entrance, to divide his troops, for if he advanced with all his forces on either street he was exposed to a rear attack from the other. But we cannot enter into a further exposition of the mediæval art of fortification.

Our view of Forchheim (*fig.* 6), a town situated between Nuremberg and Bamberg, shows how strongly even small places were fortified. Its walls were constructed according to a newer system introduced in the sixteenth century, and were supplied with stationary cannon, while the castle of the fifteenth century (*fig.* 3) was defended from wooden platforms, known as "murder-walks," which lined the entire battlements of the city and even the towers.

The country in the immediate vicinity of the cities was kept entirely bare, so that the approach of an enemy might be easily observed. The sense of security which the citizen of those days derived from his deep ditches, high walls, iron gratings, and strong doors was his compensation for the loss of the beauties of Nature which we enhance and admire around our cities. But then, as in earlier times, peace, liberty, and joy were found only within the enclosure; outside prevailed feuds, bondage, and oppression. That any person should walk forth from the city-gates from mere love of Nature was unheard of before the close of the sixteenth

century, although appreciation of natural beauty was deeply rooted in the German heart.

But even in the cities peace did not always reign. The inequality of rights, the tyranny of the upper classes, and other causes often disturbed the peaceful relations of the citizens. The fourteenth century was a period of general commotion. In Nuremberg, for example, the oligarchy of nobles had been expelled by the guilds, and their restoration was effected only by the interference of the emperor. To provide for such contingencies and to have a place of security, almost every prominent family built outside the city a private fort or castle, called the *Weiherhaus* (house of refuge), one of the largest of which is represented on Plate 39 (*fig. 7*).

The streets of the mediæval cities were narrow and crooked, as is shown by the older part of the city of Nuremberg (*fig. 5*), on the right bank of the river. It is to be remembered that the broad road leading to the castle was constructed at a later date, partly through cemeteries and convent-grounds. Nuremberg was the first city to have paved streets, but that was after the beginning of its modern history. The cemeteries were removed outside the city in the beginning of the sixteenth century.

The custom usually followed in the establishment of the older cities permitted each citizen not only to select the site of his dwelling, but also to erect it according to individual taste and means, enjoining merely the most general conformation to the prevailing style of architecture. The result is a picturesque, or rather historical, appearance in which each fragment tells its own story. Quite different is the case with the settlements of the preceding century, like Mannheim (*fig. 8*), Carlsruhe, Erlangen, etc. Built by royal commands, the streets are as straight as line and level can make them, the houses as uniform as a pattern.

Dwellings.—During the space of almost five centuries in the Middle Ages domiciliary architecture made no progress. Only very gradually did the public buildings begin, after the churches, to acquire a stately appearance. In dwelling-houses the rafters gradually gave place to cross-beams in the construction of roofs. In the thirteenth and fourteenth centuries most of the houses in the larger cities were still built of wood. After Dresden had been almost entirely destroyed by fire in the year 1491, a law was made requiring the corner houses to be entirely of stone, intervening buildings to have at least one story of that material, and the roofs of all to be covered with tiles instead of the customary shingles or straw. The earliest mention of a hut built of bricks is of one at Görlitz in 1358.

As late as the thirteenth century even city houses were arranged for agricultural purposes. There are but few remains of the buildings of that date, but the construction of the peasants' houses in Lower Saxony gives an idea of them. These, contrary to generally accepted opinions regarding them, have not attained their form by a peculiar development.

but have rather halted at a primitive stage which has fully sufficed for their purpose. Such houses consist of a single large apartment, which, though without a partition, is divided into two unequal parts serving very dissimilar purposes. The smaller, supplied with an entrance on each side and a hearth in the centre, serves for the reunion of the family after the day's work is done. The other portion, with its large entrance in front of the house, is used exclusively as a barn. The wagon laden with grain is driven through its wide entrance, and the grain is threshed on the floor and stowed away in the ample attic. At each end are stalls for cattle, over which are the feed-rooms extending to the roof. Back of the hearth we now usually find several additional apartments which formerly may have existed only in the more luxurious dwellings: a room for the resort of the master of the house on Sundays, and bed-chambers for the members of the family, while the servants occupied rooms beside and above the stalls. The lofty garret constitutes an important part of the house; it was intended for the reception of the year's harvest and for the stores of the family during the long winter.

The houses of the citizens were, up to the fourteenth century, similar to those just described. A wide entry led to a spacious, undivided apartment, which, serving as an entrance-hall, extended from the ground to the roof and as far inward as the hearth. The portion around the hearth was at most separated by a wooden partition, and in smaller dwellings served both as kitchen and sitting-room. That the city dwellings also formerly had stalls is shown by the common occurrence even in later times of the *Bühnen*, as the rooms above the stalls are still called in the Low German dialect. Figures 3 and 7 (*pl.* 40) show the small windows immediately above the large ones. The former were to light the rooms constituting the half-story above the stables; the latter were built after the removal of the stables to light the extensive space under the half-story. This half-story, divided into sleeping, storage, and other rooms, was surrounded on the inside by a gallery, upon which the rooms opened.

In the fourteenth century, when the *bourgeoisie* first came into existence, men began to appreciate the fact—whose full import has become apparent only in our day—that Germany was better fitted for trade and commerce than for agriculture. Nuremberg soon surpassed all competitors, and in a certain sense became even the supreme head of the empire, for the later emperors preferred being its guests rather than to live on their own domain. It had purchased all the castles of the nobility, and even the imperial stables; the burgraves, weary of continual strife, had before this withdrawn from the neighborhood of the jealous city. Between emperor and city arose a relationship which was found to be mutually advantageous. When the town-hall in Wöhr, a suburb of Nuremberg, was burned, the emperor gave a room in his castle (*pl.* 39, *fig.* 2, No. 7), which was long used for the city assemblies. The city on its part furnished quarters (No. 20) to the imperial mayor when the rooms of the castle were found to be too small. No. 23 is the house of the

"Golden Shield," only lately modernized, in which Charles IV. promulgated the famous fundamental law known as the "Golden Bull."

The gradual change in the manner of living effected a corresponding change in the character of the house. The large hall was divided into separate rooms suited to the different occupations of the inmates. The chief part of it was used for the storage of merchandise. Rooms were arranged under the gallery for the doorkeeper and his assistant, for counting-rooms, etc. The kitchen, which had previously occupied one end of the hall, was placed in a separate apartment. Figure 4 (*pl.* 40) exhibits such an arrangement: No. 1 is the large hall; Nos. 2, 3, and 4 are the rooms under the half-story; No. 5, the early location of the kitchen; No. 6, its later situation; Nos. 9 and 10 are the yard and entrance, which were perhaps formerly connected with No. 1, and which still serve their primitive purpose. The ancient attic is easily distinguishable behind the gable of the house (No. 3). It continued to be used in the city house as a place for storing provisions, which, on account of difficulties of transportation and unquiet times, had to be kept in large quantities.

The plan of an old house (*fig.* 5) at Goslar is much the same: No. 1 is the hall, which includes the first and second stories; Nos. 2 and 3 are rooms belonging to the original construction; No. 4 and the adjoining square, which is not numbered, are also rooms, but undoubtedly of later construction; No. 5 is the principal kitchen and wash-room.

Increasing wealth enabled the people to build houses of stone. The lower story was vaulted as a greater protection against fire and robbery; the second story became a complete one, and was the place where the family assembled. The further development of the house consisted in the rooms becoming larger and more numerous at the expense of the hall, which accordingly became considerably smaller. As a solid stone vault furnished the most secure storage-room, and as the vault could not be built higher than a single story, the latter had to be partitioned off from the rest of the hall. In consequence, the chief entrance was placed elsewhere, and thus another advantage was secured in that the family-rooms were continued around to the front of the house. This arrangement converted the hall into a dark space completely surrounded by apartments in the centre of the house.

It was customary, on account of the narrowness of the available space, to build the house with its narrow side to the street. Consequently, the hall could receive no light, the sides being closed by adjacent houses and the front by the small rooms. The solution of the difficulty was effected by the removal of part of the roof. The hall was thus changed into a courtyard, with the roof continued up only over the rooms which surrounded it. This, of course, was possible only in large dwellings. That the courtyard originated in this manner is proved by many examples of ancient buildings in which the front, the side wings, and the rear are connected by galleries overlooking the court (*fig.* 9). Luxurious embellishments were soon added to the court, in imitation of the Italians, who

had themselves borrowed the usage either from the Orientals or from the ancient Romans. A glance at the ground-plan of the Grassi Palace at Venice (*pl.* 40, *fig.* 6) shows the interior area chiefly occupied by arcades and a fine courtyard.

Some of the larger houses—those of the patriciate in the imperial towns, for example—had several courtyards, and the buildings which surrounded them decreased in importance according to their distance from the street. The family apartments, but especially those intended to serve on festive occasions, such as dining- and banqueting-rooms, were transferred to the anterior part of the house; if the latter required the entire width, the private apartments of the family were removed to the wings, in preference to giving up the rooms most favorably situated for important domestic occurrences, such as betrothals, marriages, baptisms, etc.

The gallery behind these rooms overlooking the court was widened into a vestibule, which was reached by stairs, and in later times was partitioned off with windows toward the court. Plate 41 (*fig.* 3) gives a fine example of this construction, which was not confined to Germany. For the sake of convenience, the kitchen had also been removed to the upper story. Many houses of the nobility possessed, in addition to the ordinary working kitchen, which was often narrow and dark, another more splendid one, in which the fine majolica and faïence dishes and the copper and tin vessels occupied long rows of white shelves, the gold and silver ware and the costly Venetian glasses, etc. being reserved to ornament the buffets in the banquet-hall.

The sleeping-rooms of the family usually occupied another story, in which were also store-rooms, while the servants were lodged either down stairs or in the rear buildings. The latter buildings also contained the stables, wood-sheds, etc. Apartments were rented to strangers only when wealth began to decrease, and when the pride of living and doing business in one's own house gave place to vanity and outward show, regardless of real independence.

The invention of windows effected a great improvement in the dwellings. The Roman practice of admitting air and light through an opening in the ceiling (which, as we have noted (p. 252), was employed in the abbey of St. Gall) was not adapted to a northern climate. But it may have given the impetus to discover some other means, which finally led to the invention of a special arrangement to serve this purpose. At first the "peepholes" (as the windows were called in the Middle Ages) were small, without shutters, and located under the projecting roof in order to keep out the rain. If protection were necessary, nothing was at hand except wooden shutters, curtains, oiled paper, thin plates of horn, etc.

Although glass was manufactured as early as the ninth century in a convent at Constance, and though glass windows were frequent in churches of the eleventh century, this material was not used for windows in private houses until the fifteenth century, and the use did not become general until the seventeenth century. At first the windows con-

sisted of small, round, rough panes, through which nothing could be distinguished; the lozenge-shaped panes, which were somewhat larger, smooth, and set in lead, were a step forward. The square panes set in wooden frames were of comparatively late introduction. By the sixteenth century the windows had been constructed lower down, so as to give light to persons working near them, but up to the following century only the principal rooms had windows.

The openings in the first story were guarded by iron gratings and were closed at night by heavy wooden shutters. The principal apartments in the second story possessed a row of windows set in a wooden framework which projected from the wall, and in which the windows could be made to slide one by the other, so that a better outlook could be obtained. The other rooms were but poorly lighted (*pl.* 40, *fig.* 8). But it is especially this characteristic arrangement that gives to ancient houses their unique, artistic appearance. The subsequent development of the city dwelling became henceforth the province of the architect. It was to the owner's interest to utilize the interior space to the utmost extent, especially after the custom of renting part of the house had been introduced; while the architect on his part sought to make as imposing a façade as possible.

Although all this belongs to the province of Architecture, yet before leaving this part of our subject we shall say something of the public buildings by the magnificence of which the imperial cities strove to display their power and importance. In this connection the churches themselves are to be considered, for it was a point of honor to have the highest steeple, the most splendid bridal-door. The city-halls, which especially represented the dignity of the city, were constructed with that solidity and splendor which are the peculiar characteristics of the most flourishing period of the German *bourgeoisie*. Not a few of them are valuable architectural monuments.

Our illustration (*fig.* 10) gives an inner view of the historical Rathhaus, or city-hall, of Augsburg, the architecture of which, though appertaining to the later Renaissance, is still peculiarly characteristic of the city. The ground-floor is strongly secured as a protection for the senators who assembled there and as the centre of a system of defence that extended throughout the city. The second story contains a small council-chamber which was used for meetings of the senate; the third story is occupied by a large chamber where the senate met in session with the emperor and the assembly of the empire; adjoining it are committee-rooms and court-rooms, and above are the archives, etc.

Interior Decoration.—The interior embellishment of dwellings previous to the fourteenth century was as simple as possible. It is true that even in the tenth century the halls of the abbots of St. Gall were ornamented with marble columns and with frescos painted by the monks of the convent of Reichenau; but this was an exception, and hence considered worthy of being recorded.

The floors of the private houses consisted either of hard-rolled earth

or of cement, or at best were formed of decorated tiles. The latter, sometimes brightly glazed, continued in use, together with wooden floors, as late as the seventeenth and eighteenth centuries. In many old castles the only floor was the bare rock, which was every morning strewn with rushes. Sometimes even the natural rock, hewn roughly, formed the walls of rooms. About the end of the Middle Ages carpets were used, but only on special occasions.

Panels of wood were employed at a very early date to decorate the walls, but at first they were rude and inartistic. Up to the fifth century smooth boards were used only in royal palaces. They are shown in their simple form on Plate 41 (*fig. 1*), which is copied from an old Dutch painting of a lady's chamber. About the beginning of the sixteenth century these wooden panels began to receive artistic treatment, being divided into spaces, decorated, and fitted with corresponding door-frames. They reached their highest development, though the style had somewhat degenerated, in the grand halls of the seventeenth century (*fig. 4*). At this latter period they were not continued up to the ceiling, but were finished off at somewhat more than a man's height with a projecting cornice which was used as a shelf for pictures, etc. (*figs. 2, 4*). The burnt clay plaques mentioned above as flooring were also used in the Middle Ages, as is shown by some traces of them in the cathedral of Regensburg (Ratisbon); and probably the glazed and painted tiles which are still used to render walls fireproof are the direct outcome of them.

For a long time whitewash was the common decoration for walls. In the houses of the wealthy these walls were hung with tapestry, and after the fourteenth century with expensive Brabant *gobelins*, which were finally even interwoven with gold and were extremely costly. In the seventeenth century embossed colored hangings of leather and heavy silk draperies offered a cheaper substitute for the gobelins. The forerunner of our wall-paper was pasteboard laid thickly over linen and ornamented with painted reliefs. The prevailing style of wall-decoration after the beginning of the preceding century consisted simply of some kind of tinting, sometimes shaded off to an ornamented border of stucco-work or in imitation of this. Occasionally, too, the walls were frescoed with pictorial representations (*fig. 5*).

In ancient times the rafters were left bare. As late as the seventh century birds could enter through cracks in the ceiling, as we gather from a written intimation. A great step forward was made when the lower room was separated from the one above by means of joists with boards nailed across them. In course of time the long joists were crossed by shorter ones (*fig. 2*), forming sunken squares which offered a suitable place for decoration. The beams were sometimes carved or painted. Later on, the panelling of the wall was continued up to the ceiling and united with the elaborate network of the joists (*fig. 4*). As a further decoration, paintings were placed in the centre of the ceiling and at the corners. The magnificence of such interiors is shown by the ceilings in

the Palace of the Doges at Venice, on which gilded carvings with figures of colossal size enclose the paintings of famous artists. In the eighteenth century stucco-work, which likewise called in the aid of painting, supplanted the wood-carving, especially on the ceilings (*pl.* 41, *fig.* 5).

3. FURNITURE AND UTENSILS.

In early times household furniture was much more simple than would be inferred from the writings of the Romantic school. Two articles alone, the heating apparatus and the bed, received particular attention.

Heating Apparatus.—We learn from various excavations that the Romans introduced into their northern provinces their method of heating houses by subterranean pipes, but not the slightest evidence has been adduced to show that this method was adopted by neighboring or even by the conquered nations; they were probably unable to imitate its mechanical arrangement. In Gaul the fireplace was in use from a remote period; it was simply an enclosed hearth for burning wood, and only in late times did the stone framework receive any ornamentation. According to Ulfilas, the Goths used stoves constructed of masonry.

In the fourteenth century stoves made of tiles were in use, as we learn from excavations in the ruined castle of Tannenberg. These stoves, constructed with concave tiles, had acquired a degree of technical perfection which was subsequently lost. They were glazed and colored yellow or green. About the end of the fifteenth century other colors were also used, and the stove was built in conformity to the architecture of the period, so that it became an ornamental as well as a useful piece of furniture. Many splendid specimens are extant. We exhibit a comparatively simple one on Plate 42 (*fig.* 7). One of the finest examples of these stoves is seen in the Prince's Chamber of the Augsburg senate-house (*pl.* 41, *fig.* 4). After the advent of the modern era there came into use, from localities in which the iron industries were developed, the well-known cast-iron stoves, which at first were decorated with biblical scenes, and later with local coats of arms or with other ornamentation.

Beds.—The sleeping apartment, as shown in mediæval pictures, contained a bedstead raised on legs above the floor and supplied with mattress, sheets, and pillow, the latter supported by a lofty headboard. Large pieces of woollen cloth were used as coverlets. At first the woodwork was turned, but later it was carved. The size of the beds was gradually increased, until in the fifteenth century they developed into immense family-beds, each of which was capable of holding several persons. The headboard was increased in height, and finally turned over so as to form a canopy or roof, which was at first supported by ropes attached to the ceiling (*fig.* 1), and later by four columns which were prolongations of the legs of the bed. It was hung with curtains, one being usually drawn back, and it thus resembled a room within a room. Up to this period, as many illustrations prove, people slept entirely nude.

Toilet Service.—From the sixteenth century on, every good room was

provided with a toilet-stand. Previously, people had performed their morning ablutions at the nearest well, as is still frequently done in the country. But during the Middle Ages the higher classes used a basin, which was held by a servant, who poured water into it from a pitcher. In the same manner they washed their hands before and after meals, for they used their fingers in eating solid food. Subsequently, a tank and basin were placed in a niche in the wall, and the waste water was collected in a metal receptacle beneath; beside the niche a towel was hung from a wooden roller (*pl. 41, fig. 2*, to the left).

The Seats were generally benches along the wall beneath the tapestry. They were arranged in the window-recesses so that persons could sit *vis à vis* (*fig. 2*). Cushions lay about for use if desired. There were also particular chairs of state reserved for distinguished persons. They had arms and a back, and in early times were made of pine or of oak decorated in the style of the period. Plate 42 (*fig. 1*) shows a rare specimen which is preserved at Dresden. In the fifteenth century the back was raised so as to support a canopy, the sides were closed, and a writing-desk was added in front. This style was used for study. The seventeenth century is distinguished by roomy chairs with cushioned arms and back, covered with gilt leather and hung with fringes. In the eighteenth century damask was used instead of leather, the back was made higher, and supports were added to the sides for head-rests. Common chairs were made so that when not in use they could be folded and placed against the wall. In that case the legs were crossed (*pl. 41, fig. 1*). Afterward oak chairs with three or four expanding legs and small, often fantastically carved, backs, came into use. A curious revolving arm-chair is shown on Plate 42 (*fig. 2*) from the original at Ratisbon.

Tables.—In conformity with the by no means too gentle bearing of the men of earlier days, it will readily be inferred that it must have been extremely desirable to have the tables as strong and massive as possible; indeed, we find this to have been the case among the Teutonic nations in all past periods. In order to give to them a stronger base of support, the legs were expanded and strengthened by crossbars, the lower of which served for foot-rests (*fig. 6*). Carvings were added as decorations, which of course partook of the style of ornamentation prevailing at different epochs; as late as the second half of the seventeenth century the carving was sometimes very elaborate. The art of uniting variously colored pieces of wood into pleasing figures, with which large and small articles of furniture were ornamented, was practised at an early date, first in Italy, afterward also in northern countries. With the increase of luxury we find in royal apartments tables whose tops were made of ebony or in extremely artistic imitations thereof, inlaid with precious metals, ivory, and mother-of-pearl. Those who aimed at greater splendor of appearance had the tables painted in bright colors and even ornamented with pictures.

Chests, Cabinets, and Caskets.—During the Middle Ages proper, solid

iron-bound chests served for the preservation of the family treasures, even if the latter consisted only of linen. About the beginning of modern history coffers and movable cabinets (*armoires*) replaced the earlier and more unwieldy chests. They occur of various shapes, according to the districts in which they were made, yet as a rule so magnificently decorated as to serve rather for household ornaments than for utility. Figure 3 (*pl.* 42), from the collection in the Teutonic Museum, is a specimen of such a closet, with its painted and gilded Gothic carvings; Figure 4 is one from the time of the later Renaissance, belonging to a gentleman of Nuremberg; Figure 5 is a buffet with late Gothic decorations, belonging to the style of the Middle Rhine country.

Besides these large receptacles, small caskets must have been in very general use from the earliest times, as is evident from the large number of specimens extant, especially intended as receptacles for jewelry, and belonging consequently to the ladies; their decorations were often extremely costly. Some of these caskets, carved of ivory, were even imported from the East. Those of wood were either simply carved, with ornamented mountings which might be of gold (*fig.* 11), or were covered with embossed leather (*fig.* 10). After the fifteenth century painted caskets and boxes came so much into use that the manufacture of them became a distinct branch of trade.

Drinking Vessels.—Among the mediæval household articles the drinking vessels are especially notable. That it was the custom among the ancient Teutons to drink from the skulls of their slain enemies is a notion which, as the philologists have shown, rests upon a false interpretation of passages from ancient writers. Large ox-horns were used by them as drinking vessels, such as have continued to serve the same purpose to the present time. Just as we meet with cups of the Byzantine period hollowed out of elephants' teeth, so we find similar ones made of walrus' teeth in use among the northern nations of antiquity. Later, the so-called "griffins' claws" were much in favor. They consisted of black polished horns mounted in ornamented metal, often covered with fantastic lids and supported on feet (*fig.* 30).

The common people used rude earthen vessels which were at first cup-shaped; later on, in the fourteenth century, they were formed like a jug and glazed. Glass vessels occur about the same time. In Germany they were at first dark-green in color, cylindrical in shape, and half an inch thick. The attachments with which they were usually supplied served both for decoration and to give a firmer hold. In the sixteenth century they first began to be made thinner and lighter in color, while in Italy—especially at Venice, which had natural advantages for this manufacture—those wonderfully fine light and graceful vessels were made which figured among the articles of luxury upon the tables of the great throughout civilized Europe. This glassware was veined with delicate white or colored threads and decorated with reliefs, while at a later period the vessels were ornamented with fantastic decorations of leaves and flowers. In

this shape they continued to exist as models above all imitation. In other countries paintings were burned into the glasses (*pl.* 42, *fig.* 28) or they were set in precious metals (*fig.* 31).

The glass industry, which had been developed at a comparatively early period in Bohemia and other parts of Germany, produced beakers of conical or cylindrical form remarkable for their size, and finally Venetian productions were imitated. The ornamentation, apart from shape and color, consisted in the sixteenth century, as noticed above, of paintings burned into glass; in the seventeenth century, of engravings upon the surface cut with a diamond; and in the eighteenth century, of incised figures or diagraphic engravings.

Stimulated by the much older productions of Italy, the art of pottery began from the time of the Reformation to attain a considerable degree of development in northern countries as well, especially in the region of the Middle Rhine. Its productions in burnt clay and stoneware excelled in the glazing; some, especially those of Nuremberg and Kreussen, were ornamented with reliefs in color (*fig.* 19); but none could be compared, so far as form was concerned, with the ancient models.

But this is not true of the vessels of gold and silver, which in the fifteenth and the early part of the sixteenth century attained so high a standard of excellence as regards taste, and in the course of the latter century such magnificent proportions, that they have remained models for all subsequent time. From the "maigelein," a small cup-like vessel, to the customary goblet (*fig.* 29) and the high double goblet called "scheyern," the shapes and classes of these vessels are so numerous that the description of them would require a special treatise. The *chef-d'œuvre* was the goblet-shaped épergne, in which invention and workmanship rivalled each other to produce a magnificent result.

In the manufacture of such productions, in addition to the arts of casting, moulding, and encasing, that of enamelling was now made use of. This art had played an important rôle in Byzantium and during the earlier Middle Ages in the decoration of articles belonging to the ritual; it was again taken up in the sixteenth century, and, although somewhat changed, yet with decided success, especially in France, in order to provide drinking and other vessels with ornamentation. Of this class of productions the Limoges majolica ware (*figs.* 14, 20) was especially valued. Besides the precious metals, other materials were used for drinking vessels, such as agate (*fig.* 18) and ivory (*fig.* 22).

With regard to a peculiar custom in vogue, the so-called "welcome cups" (*figs.* 31-33) are especially notable. They had no foot or base, and stood mouth downward, so that they had to be emptied before being set down. The most curious of these welcome cups was the double one shown in Figure 33; it consisted of a large cup in the shape of a female, supporting a smaller cup which swung on an axis: the custom was for a gentleman to drink from the larger one without spilling from the other, which he then presented to a lady.

Ordinary receptacles for liquids, such as pitchers or tankards, were made at an early period of the Middle Ages, chiefly of bronze, afterward of brass (*pl.* 42, *fig.* 17), and finally of tin (*figs.* 16, 23). As long as artistic forms seemed inseparable from technical handicraft, these too followed the prevailing style in shape and ornamentation; the latter consisted at first of plastic, afterward of engraved, decorations.

Table Ware was less developed. Spoons, indeed, were in use at an early date; the common people used wooden ones at first, and later those made of iron or tin; the wealthy had them of gold or silver and artistically carved (*fig.* 34). Forks were introduced in comparatively recent times, and seem to have originated in the small spits or broaches which were used in eating larks and other small birds. Instead of forks, knives with sharp points were formerly employed. There are many specimens extant of the forks of the sixteenth century, but their costly material and decoration show that they must have been in use only among the wealthy. At first they were made with but two long prongs (*fig.* 35), and then with three short ones, as is still the custom. Guests brought their own handsomely ornamented knives and forks (*fig.* 35), which were carried in sheaths (*fig.* 36) worn at the belt.

The before-mentioned majolica ware was highly prized for table utensils (*figs.* 14, 15); such wares were imitated in almost all northern countries in and after the sixteenth century, but continued still to be imported from the East. Faïence ware, generally blue in color, took the place of the former about the close of the seventeenth century. Porcelain, as is well known, was a discovery of the first half of the eighteenth century, but it did not come into general use before the end of that period. Still, dishes of this material soon came to be preferred for serving the food. In ordinary houses the family usually ate from a single large dish, commonly of wood or tin, but in exceptional cases perhaps of silver or gold.

Kitchen Utensils.—During the early Middle Ages the kitchen ware was common pottery; later it was made of bronze like the mortar (*fig.* 12), and cooking-pots of this material also occur. The use of brass and copper was general long before the introduction of iron. The Nuremberg brass basins (*fig.* 13) were exported to all countries, and their use was by no means confined to church purposes.

Methods of Lighting.—The only artificial means of light consisted of tallow and wax candles. The shapes of the candlesticks were manifold; Figures 26 and 27 illustrate a couple of specimens. Chandeliers, frequently arranged in connection with horns of deer or other animals, to whose trochings the candlesticks were attached, illuminated the festive hall. Figure 9 shows a magnificent specimen, which represents a finely-carved dragon wound about the antlers of a reindeer. It was formerly in the castle of Gleishammer near Nuremberg (*pl.* 39, *fig.* 7), and now belongs to the collection in the Teutonic Museum.

Timekeepers.—The mediæval methods of reckoning time were crude. It is said that Cæsar found on the coasts of Britain water-clocks which

were of Eastern origin.¹ Sun-dials were known in Germany as early as the tenth century; they were indispensable even as late as the sixteenth and seventeenth centuries for the regulation of all other timepieces. The famous astronomer Tycho Brahe made use of sand-clocks in his observations. Nevertheless, the invention of wheel-and-weight clocks dates far back in the Middle Ages.

The archdeacon Pacificus, who died at Verona in 846, is said to have discovered the principle upon which the construction of all such clocks depends, though it is also asserted that this style of clocks was derived from the Arabians. But the machinery was so extensive that it could be operated only in towers and steeples, and the clocks were very costly. As late as 1483 the magistrate of Auxerre had for the latter reason to obtain the royal permission to purchase one. The earliest clock of this kind, however, is mentioned in 1332 at Dijon.

As is well known, watches were invented by Peter Hele in the year 1500, and were known by the name of "Nuremberg eggs." For more than a century after their invention the utility of watches was hampered by the difficulty of regulating them, and especially by the lack of a uniform division of time. So-called "large" and "small" clocks were used; that is, the day was divided either into twice twelve hours (*pl.* 42, *fig.* 24) or into twenty-four hours. In some places—for example, Nuremberg—the first division of twelve hours was counted from sunrise, and the second began at nightfall. Consequently, the shortest day consisted of eight hours, and the longest night of sixteen hours. To reconcile the different measurements of time, clocks were made with several hands which simultaneously indicated them all; comparative tables were also used.

Conclusion.—It would lead us too far were we to make mention, if only by classes, of all the conveniences and devices by means of which the European of the Middle Ages—the Southerner environed in political and social disorganization, the Northerner dependent on his impoverished and barren soil—sought to lighten the struggle for existence. Constantly deepening and widening the compass of his feelings, he endeavored to establish for himself as a retreat from the inhospitable outer world a congenial home, a pleasant fireside. The products of his handicraft bear throughout all European countries the same general character impressed upon them, as we may see from the numerous remains which have come down to us: a glance at our illustrations will suffice to make this clear.

These palpable evidences of his endeavors are to be looked upon as the index of a fresh and exuberant life; never are they constructed with an eye to the useful alone; everywhere the hand of the artist, sculptor, or

¹ Caesar mentions his own use of water-clocks in Britain to determine the relative length of the days and nights ("Certis ex aqua mensuris breviores esse quam in continenti noctes videbamus"). But he says nothing about finding such clocks in use among the natives. The *clepsydra*, which was no doubt the instrument referred to in his statement, had been introduced into Rome from Greece, and was used in camps to measure the length of the night-watches.—ED.

painter is apparent; and although in respect to style they are for the most part inferior to the productions of classical antiquity, they have yet an intrinsic worth of their own no less significant.

Erroneous in many respects is that view which finds expression in the current term "Dark Ages." Where all the objects with which man is brought into daily contact are pregnant with color and life; where, for example, entire church-portals, fountains, and other similar objects are painted and gilded; where porticos are completely ornamented with illustrated scenes and streets are transformed into picture-galleries,—the creative, conservative, and appreciative spirit must be alive and active. Before, however, following out this spirit in its compass and development it will be necessary to cast a glance at the material foundations which formed the resources of mediæval life.

4. AGRICULTURE.

Charlemagne may be said to have introduced Agriculture and the Industrial Arts north of the Alps. He was the first to apply rational methods not only to political, military, financial, and legal affairs, but also to the formation of the character and to the development of the resources of the nations which he governed. The process was often painful to the natural disposition of the people, and particularly to the Teutonic nationalities, but it was absolutely necessary, considering the state of affairs after the great migrations and the Merovingian period. That his efforts did not immediately accomplish greater results was due to the incapacity of his immediate successors. However, he gave to the world an impulse which never died out.

Charlemagne paid the greatest attention to agriculture, and rewarded with gifts of land those who cleared away the primeval forests. Tillage and stock-raising were protected by his laws, which manifest a thorough experience, and were encouraged by the establishment on all his estates of experimental stations to serve as patterns, which he carefully superintended. From his edicts we learn how the cultivation of gardens, grain-fields, meadows, and forests was conducted, how cattle and other live-stock were treated, what vegetables were raised, and what ornamental shrubs were grown; in fact, they fully instruct us as to the condition of agriculture in that age. Fruit-culture, which had previously included only wild pears and crab-apples, made considerable progress, and special attention was given to the cultivation of the vine, which had been introduced by the Romans.

In the development of the industrial arts the emperor was hampered, at least in Germany, by the lack of centres of population. These arts were practised principally in the monasteries and convents, which, as we have said (p. 252), formed complete communities. Many handicrafts were confined to the women, but they were ennobled in the eyes of all the people by the fact that Charlemagne required his own daughters to practise them. A golden spindle was placed upon the grave of Luitgard,

the daughter of Otto the Great, duchess of Lorraine and Franconia, as a testimony to her diligence.

More important was the influence exerted by Charlemagne upon the mechanical industries: he organized these on his own estates, and thus called into life a complete round of activity. He promoted trade and commerce, which had always flourished along the Rhine and in other regions colonized by Rome, indirectly through the construction of roads and bridges, improvement of river navigation, regulation of tolls, stringent measures against robbery and extortion, and similar reforms.

Forests.—The clearing of the forests was continued throughout the Middle Ages, but of course without any system. The result was that in some districts wild beasts were a source of danger, while in others wood became scarce, and measures had to be taken for the preservation of the forests—a care which the ancient Teutons had never neglected.

Products.—The increase of cultivated lands brought with it an increase of population, which was certainly very sparse during the early Middle Ages. The methods of agriculture improved, though the condition of the farming class became more and more unfavorable with the development of the feudal system. In Germany grain was principally grown, but other products were cultivated for commercial purposes. Thus in the North the raising of flax, pursued from an early period, became widely extended; the cultivation of rape was soon added; while in the South the cultivation of spices, dyes, and medicinal plants was begun. Choice vegetables and fruits were chiefly grown in the convents, whence they spread to country estates and to the city gardens of the wealthy. The grape was cultivated at that time in some districts from which it has long since disappeared.

Stock-raising.—By reason of the great importance which attached to the horse during the Middle Ages, attention was given from an early period to improving the breed, while cattle were in this respect neglected. The flocks of sheep, however, increased in proportion as men laid aside skins and sought better protection against the cold of winter. The chase was a privilege which became more and more exclusive, until finally it was permitted only to nobles and princes, and consequently can scarcely find a place in a history of civilization.

Land Tenure and Farming.—The social revolutions which occasioned the transition from mediæval to modern history were highly beneficial to the interests of agriculture. The nobility, almost the sole possessors of land, had lost many sources of income by the increased powers of the royal prerogative, and were compelled to develop the productivity of their estates. Tillage by discontented serfs was no longer sufficient. A great advance was made in the sixteenth century in land tenure by the introduction of leases and hereditary tenure. Earnest attention was given to methods of husbandry: the first treatise on the subject in Germany appeared in 1580. Large tracts of land, which had been unproductive when held by mortmain, were by confiscation of Church property con-

verted into royal domains and brought under cultivation. Even great personages, such as the elector Augustus of Saxony and the emperor Maximilian II., personally concerned themselves about farming and stock-raising. Superfluous forest lands were cleared; swampy districts were drained and colonized; new and useful plants began to be introduced, such as clover, tobacco, and later the potato. A machine for planting was used in Carinthia as early as 1665. The Thirty Years' War almost destroyed German husbandry, but the universal misery and poverty led to the development of the native powers of the people. The gradual elevation of the peasantry dates from that period.

5. TRADE AND COMMERCE.

Trade and commerce increased in importance with the growth of cities; the latter indeed depended upon the former. The value of association was early recognized. Guilds and trades unions were established in the cities, and the larger of the cities became united in

Leagues.—The oldest of these, the "Hanseatic League," which was originally founded for the protection of commerce in the North, became a widely-recognized and important political power. It originated in 1241 in an alliance between Hamburg and Lübeck, and eventually its membership numbered eighty-five cities, with headquarters at Lübeck. Its final constitution was formulated at Cologne in 1364, and thenceforward it began by means of its vast merchant marine and navies to extend its supremacy over the entire North. It established factories in the larger cities of foreign countries, constructed roads and canals, cleared the seas of pirates, and labored untiringly not only to enrich industry by providing markets for its products, but also to establish and extend civil liberty. Similar leagues existed on the Rhine in Swabia and Franconia, but their powers were wasted in fruitless contests with the nobles.

Trade Guilds.—The guilds, which were each composed of the members of a single trade, were united into larger associations with a common constitution, under the direction of a guild-master, for purposes of business and social intercourse. They strove not only for the improvement and just recognition of their trades, but also for a part in the government of the cities, which was generally monopolized by a few noble families. They jealously watched over the condition of the trades, saw that none but properly taught and tested masters exercised them, and that only good work was produced, and thus gave to the industrial classes a standing which has had material effects upon the course of history. In some countries even nobles and kings sought membership in the guilds, so as to share their honors and privileges.

The same combination of circumstances as that which had so great an influence upon agriculture impelled the working classes to higher endeavors. Sprung as the mechanics were from the ranks of the serfs, their migration into the cities in no wise changed their condition. Though they could better enjoy the fruit of their labors than the farmers, still,

they were not absolute owners of their property, and they were subject to many compulsory services. When the sovereign came to a city its bakers, brewers, and butchers were obliged to entertain him and his suite, and others were compelled, without compensation, to furnish means, such as horses, vehicles, and ships, for his further travels. If a noble wished his servant to marry the daughter of a mechanic, the latter had to submit. Free persons alone were called burghers; children of mixed marriages took the position of the parent of "lower rank." The long struggle of the artisans for liberty accomplished its purpose before that of the peasantry, but the individual steps belong to history proper. We are here concerned only with the development of the trades.

The first guild was established by the fishermen of Worms in 1106, and it was followed by that of the furriers and cloth-makers of Quedlinburg in 1134; in the thirteenth century guilds were universal. In the middle of the fourteenth century they began their long and often bloody struggle for the attainment of their rights. In less than a century after the successful termination of that struggle they in turn became tyrannical, and oppressed others as they themselves had been oppressed. Gradually becoming matters of form, more burdensome to the individual than beneficial to the class, they lasted throughout the seventeenth and eighteenth centuries, and, after fruitless efforts at reformation, they were finally dissolved in our own times.

Artisans: Metal-workers.—Of the individual trades, the smiths were the first to acquire importance. In the days of Charlemagne, and even much earlier, they were highly appreciated. The most famous smithies existed in Styria, and Solingen was also renowned in early times for the same reason. Gradually the sword-cutlers formed a class distinct from the blacksmiths, locksmiths, nailsmiths, etc. As early as the twelfth century the sword-makers of the Netherlands, of Magdeburg, Strassburg, and other places, were famous for their skill. Of the armor-makers, whose importance was not fully established until the introduction of iron armor in the fifteenth century, those of Milan were the best known, but were closely followed by the armorers of Nuremberg and Augsburg. In the fifteenth and sixteenth centuries the locksmiths elevated their trade to the rank of an art, and bequeathed to posterity many specimens of their work which are highly valued in our museums.

We have already spoken (p. 266) of the admirable achievements of the gold- and silversmiths. We may add that the engravers on copper sprang from this class: Albrecht Dürer himself, the most famous of the old engravers, began his artistic career as a goldsmith. Coppersmiths are mentioned in Augsburg in 1363, in Nuremberg in 1386. In the latter city wire-makers and brass-beaters occur in 1321, tinsmiths in 1328, and needle-makers in 1370.

We have already noted (p. 47) that the arts of casting metals and of alloying copper with tin had descended from pagan times; in the early Middle Ages, too, these arts were extensively practised. The bronze

doors of the cathedral at Hildesheim, cast by order of Bishop Bernard in 1015, are the first, as they also rank among the most important, specimens of the application of these arts. In the year 1339 the brass-founder Hugo of Nuremberg was summoned to Augsburg to cast a bell of forty hundredweight. The great foundry of Peter Vischer, who prided himself upon being a simple mechanic, has won a name in the history of art. Heavy ordnance was cast in both Nuremberg and Augsburg as early as the fourteenth century. Figures 1 and 2 (*pl.* 43) exhibit the exercise of two of the trades of metal-workers in the sixteenth century.

Builders.—Not less famous than the metal-workers were the building craftsmen. The carpenters were first united in a guild in 1368. The first association of stone-masons was formed in England. In Germany the masons organized in 1459 at Ratisbon an association called the *Bauhütte*, to include all the members of the craft in the empire. It received from Maximilian I. many privileges, especially the right of judicature, which was exercised in the cathedral at Strassburg under the presidency of the master of the order. It is unnecessary to speak of the merits of these artisans; they are chronicled in the splendid church edifices of the Middle Ages. Carpentry since the fifteenth century almost deserves a place among the fine arts on account of the splendid specimens of its productions in houses and churches.

Potters and Turners.—Of all the arts pertaining to the construction and furnishing of houses, that of the potters is the most ancient. The Germans learned it from the Romans, whose influence, to judge from discoveries lately made at Pestlin, extended to the far East, and whose style prevailed unchanged as late as the fourteenth century. We have already spoken (*p.* 266) of the potteries of later centuries. The art of turning (*fig.* 1) reached an astonishing degree of excellence during the seventeenth and eighteenth centuries. The workmanship of the Zick family of Nuremberg in that line has never been surpassed.

Glaziers practised their trade for domestic use in Augsburg in 1363, and in Nuremberg in 1373. Mirrors were still for a long time made of metal. Glass mirrors even as late as the seventeenth century were quite rude, globular in form, and accordingly presented only distorted images. In 1685 a Frenchman, Abraham Thevart, invented the process of casting glass, which led to the production of flat mirrors; but the art of coating with amalgam had been previously known to the Venetians.

Manufacturers.—In regard to the manufacture of dress materials, it is known from a document of the year 959 that weavers were introduced into Flanders from Germany. In Nuremberg we find wool-beaters and cloth-shearers as early as 1285, lace- and ribbon-makers in 1343, and velvet-makers, etc. in 1443. The wealth and prominence of the Fugger family of Augsburg show how lucrative must have been the linen manufacture. Printing on cloth had been practised for a long time previous to the invention of printing on paper.

The tailors formed a distinct trade after women had ceased making clothing at their homes. A tailors' guild was in existence at Helmstädt in 1244, at Nuremberg in 1316, at Zittau in 1350, and at Augsburg in 1368. At an early date the tailors were divided into separate classes according as they turned their attention to the manufacture of men's or women's garments; and at the same time with them appear the embroiderers (*pl.* 43, *fig.* 3) in silk, feather-decorators, button-makers, clasp-makers, etc. Tanners and furriers are mentioned in Augsburg in the thirteenth century. The parchment-makers, whose uninterrupted activity since the days of the Romans is evidenced by manuscripts belonging to every century, also organized themselves in guilds. We may here mention that generally several, sometimes dissimilar, trades were united in a single guild, and that even the fine arts, such as painting and sculpture, were considered trades and were associated with them in guilds.

Other Industrial Arts and Trades concerned the preparation of food, such as those of bakers, brewers, butchers, millers, etc.; these all reached importance at an early period: next to them came the classes that ministered to intellectual or spiritual needs, as the makers of rosaries and writing implements (the latter being usually carried at the belt), bell- and lute-makers, card-painters, pattern-makers, missal-illuminators, and representatives of many other arts, some of which have been lost. Even in the fifteenth and sixteenth centuries the compass-makers of Nuremberg and Augsburg produced excellent mathematical instruments. It was one of these, the astrolabe, that made the discovery of America possible. This instrument had been derived from the Arabians, improved by Regiomontanus, and taken to Portugal by a Nuremberger who became the Portuguese admiral Martin Behaim.

Baths played a peculiar rôle, especially during the fifteenth and sixteenth centuries. Bathing was, according to ancient Teutonic ideas, a necessity of daily life, and, as the narrow limits of the cities and the consequent smallness of many houses did not permit every dwelling to have a bath-room, the magistrates instituted public baths for the use of the poorer classes. The wealthier people patronized private bathing establishments, which were generally better supplied with conveniences than the domestic bath-rooms.

Bathing establishments (*fig.* 4) offered means not only for proper ablution of the body, but likewise for the care of the hair; they also exercised special functions for the preservation of health, for, in accordance with the current views of the period respecting the corruption of human nature, the human body, even in the case of individuals whose constitutions were perfectly sound, was supposed to require constant medical treatment. This consisted chiefly in bloodletting, so that bleeding and cupping were connected with bathing (*fig.* 4). As places of amusement were scarce, the bathing-houses gradually became pleasure-resorts where both sexes met. The scandals that at length arose in connection with them led to their abolition by the civil authorities.

Medical Science.—The medical art of those early times occupied a low plane. The skill of the physician (*pl.* 43, *fig.* 5) was almost entirely confined to the discovery of the patient's temperament and complexion—whether he was by nature hot or cold, moist or dry—and the diagnosis was based principally upon the examination of the urine, although medical science had long been taught theoretically in the universities and medical works were printed at an early date.

It makes one shudder to recall the experiments which were made upon the bodies of the people, especially upon women in confinement and upon young children. It required all the native vitality of the race to counteract the effects of those ignorant tamperings with nature. However, in the sixteenth century anatomy began to be carefully studied: Vesalius, indeed, brought this science to a considerable degree of perfection toward the middle of that century.

Figures 9 and 10 represent a store and a merchant's office: these, and also Figures 1–5, are copied from wood-cuts by Jost Amman, a famous engraver of the latter part of the sixteenth century.

General State of Society.—While the seeds which were subsequently to reach an unforeseen development had begun to germinate under the protection of the city-walls, everything outside had yet to struggle with the greatest difficulties. International law was scarcely thought of. Wars no longer resulted in enslaving the conquered, as was the case in antiquity, but non-combatants were still pursued by fire and sword. Even in times of peace the ownership of property outside the limits of the jurisdiction or territory to which an individual belonged was measured by his ability to protect it. On the high seas every sea-farer was a freebooter toward strangers of all other nations. On shore the German scarcely had a country, divided as it was into a thousand petty sections, in all of which but his own he was regarded as a stranger.

The robber-knights of the Middle Ages developed into the highwaymen and footpads of modern times. Feuds or private warfare prevailed down to the eighteenth century, as is evidenced by the strife between the citizens of Nördlingen and the counts of Oettingen. As late as 1521 the country squires of Franconia, who had vowed vengeance against the citizens of Nuremberg, did not consider it beneath their dignity to detain any straggler from that city who had the misfortune to fall into their hands, and to dismiss him only after stripping him and cutting off his right hand. The cities with scant process of law hanged, beheaded, or broke upon the wheel all such marauders whom they captured, and during the Reformation combined for the last time in an effort to destroy these nests of robbers. Import duties formed an extortion of another kind. Every petty sovereign closed the boundaries of his district (which was often composed of many scattered bits of territory), and permitted his rivers and roads to be traversed only on payment of heavy tolls.

Commerce.—It is easy to imagine how severely commerce must have suffered under such circumstances; yet in spite of it all the merchants

even of the inland cities had ships on every sea, and in wealth and splendor of living vied with princes. Venice ranked first among mercantile cities, and developed a plutocracy whose power has never since been equalled. Long, armed trains brought goods from the seaports, transporting them across the Alps on pack-mules, and through Germany in heavily-laden wagons over wretched, unpaved roads. From station to station it was necessary to hire guards, kept for this purpose by the sovereign of the territory, to protect the train against attacks of robbers. All possible accidents had to be taken into account in commercial enterprises, and the energy and resources of a mercantile class which could under these unfavorable circumstances successfully cope with difficulties of such magnitude deserve our highest admiration.

6. INSTITUTIONS OF LEARNING.

The intellectual condition of the Middle Ages was far inferior to that of their material prosperity, though the latter eventually reacted favorably upon the former. The Church was the only educational power. At first the work of education was confined to the monastery. We have already seen (p. 253) how in the ninth century the cloister of St. Gall was provided with two schools, one for its novices and the other for lay pupils. Not until a later period did the secular clergy participate in the work, either by direct teaching or through the supervision of schools connected with the parishes. Notwithstanding all the deficiencies of the mediæval clergy (we may cite, for instance, the recorded fact that in the year 1291 neither the abbot nor the members of the chapter of St. Gall knew how to write), it shows a complete lack of the historic sense to assert that the Church kept the people in ignorance. Far more training is required to lead a people in a primitive state, even though endowed with great native talents, from the gross requirements of material life and the pursuit of practical purposes to abstract conceptions and logical thought, than even so well-organized an institution as the old Church could exercise in the time given. It must not be forgotten that it requires centuries for the development of a people to that point where isolated individuals begin to recognize the superiority of intellectual culture; and a further period must elapse before such views pervade the entire social body.

Universities.—The instruction given in the parish schools did not extend beyond reading, writing, and a few liturgical and doctrinal teachings, to which afterward a little Latin was added. The universities, however, did more to win respect for science. These institutions had their origin in Italy and France, where the universities of Salerno and Bologna, of Paris and Montpellier, were the earliest. In Germany the University of Prague was founded in 1348, and that of Vienna in 1365. These establishments were not yet universities in the modern sense, for they cultivated special branches of knowledge; thus, Salerno was devoted to medicine, Bologna to jurisprudence, and Paris to theology, other supplementary branches of course being added. In modern usage the word

"university" refers to the totality of the branches taught, but in those ages it had reference rather to the community of professors and students. Such centres of learning were few, and students gathered to them from all countries, the universal use of the Latin language doing away with all distinctions of nationality. At the same time, the feeling of patriotism played an important part in the institutions of learning; societies composed of compatriots of the different countries were formed, and constituted bonds of greater or less intimacy between their members: these associations were the origin of the later students' clubs, which exercised an important influence upon the constitution of the universities as late as the eighteenth century.

The salaries of the professors were paid from the tuition-fees of the students; the income from this source was very considerable, so much so that foundations for needy students could be established therefrom even at an early date. These foundations were termed *Burses*, whence the German term *Bursch*, "student."

Students' Clubs.—The universities were endowed with many privileges, especially that of jurisdiction over their own members. From this circumstance arose a condition of great disorder. Those to whom the students were responsible for misdemeanors had themselves the greatest interest in shielding the culprits, for the reputation of the institution was bound up with their own. This was doubtless the cause of the constantly-increasing lawlessness which prevailed in the academic communities, and which increased during the sixteenth century, until it culminated in the seventeenth and eighteenth centuries in an organized system, banding the students in corps and associations of diverse nationalities, and defying all attempts to suppress disorder. It was only by freeing the pursuit of knowledge from external restrictions—which was the issue of all academic reforms in Germany—that a way was at last opened for internal agencies to bring about a regeneration.

The cause of learning was also disgraced in the latter portion of the Middle Ages by the class called "travelling scholars," who were originally an excrescence from that of charity students. They were mere vagabonds, without any serious desire of learning, who availed themselves of the free burses to attend the universities, and made a livelihood by stealing, by begging, or by street-singing in the choruses which had been instituted to support needy students. When compelled to leave one university, they sought another or went through the country practising impositions on the peasants and the clergy. The custom of placing younger pupils under the charge of older ones was also productive of evil, the former being often brought up as beggars and rogues. Romance-writers give a poetical embellishment to these things, which, however, in the sixteenth century had grown to be a general pest; nor did they cease until matriculation in the universities was strictly regulated.

Figure 8 (*pl.* 43) exhibits a lecture-room of the University of Tübingen in the first half of the seventeenth century. In explanation we have only

to add that the persons sitting at the left with hats on are students belonging to the nobility, who had the privilege of occupying special seats long after they had been compelled, in compliance with the ordinary rules of politeness, to remove their hats. Until the art of printing had spread the means of knowledge and made it more accessible, instruction consisted simply in the dictation of the lesson.

Degrees.—The privilege of conferring degrees was early possessed by the universities. The degrees were in the beginning difficult to obtain, and were graded into those of master, licentiate, bachelor, and doctor. At a later period the acquisition of the doctor's degree was celebrated with great festivities, and some universities even incurred the suspicion of selling their degrees.

Primary Schools.—Figure 6, which is copied from a wood-cut by the Augsburg painter Hans Burckmair, shows the interior of a primary school. The pupils, who were often only half clad, were provided with slates, and sat upon low benches, without desks, around the teacher, whose instruments of punishment, such as the rod, fool's cap, donkey's face, etc., were more numerous than his implements of teaching. We have already mentioned (p. 276) how limited was the range of knowledge which was acquired, often with great difficulty and through long years, in such schools.

Fencing-Schools.—The art of fencing was considered part of a good education. In early times the sons of such of the nobles as had ambitious aspirations were placed, after a meagre education by their domestic chaplain, at some court, where they were trained in bodily exercises, less for the purpose of physical development than to fit them for a military career. At the beginning of modern times it was customary for civilians also to receive such a training. Most cities had fencing-schools, which were well systematized and conducted by skilful masters. There are extant a number of illustrated manuscript works of the fifteenth century, and some printed works of the sixteenth century, upon the subjects of boxing and wrestling and on the handling of weapons of offence and defence of the most varied kinds. From one of them, illustrated by Tobias Stimmer, we copy our Figure 7, representing a combat with long two-handed swords, which, on account of their weight, required the use of both hands to wield them.

In learning and refinement the Teutonic nations were at this period inferior to those of the Latin countries. In Italy especially intellectual culture had spread through all ranks, and produced an enthusiasm for knowledge which extended even to the female sex. North of the Alps women were but little influenced by the intellectual movement. German culture, however, took deeper root, and eventually received a direction which differed from that of its neighbors as radically as did the antecedent causes out of which these variations were developed.

7. SOCIAL LIFE AND AMUSEMENTS.

The question whether the Teutonic character—that is, the prehistoric ethical capacity of the nation—would alone have sufficed to attain that degree of culture which it developed in later times is wholly irrelevant. This problem was never actually presented for solution, and we are dealing only with the actual facts of history and not with the consideration of hypotheses. But in order fully to comprehend the facts it must constantly be borne in mind that the ethico-intellectual disposition of the Teutons has ever remained the most important factor in the development of German culture as well as of that of kindred nationalities, and that the advance which followed every critical stage of progress was due to impulses given by this element of the original character. Crises have been the vehicles of all progress; a comparatively smooth and steady growth, such as the Greeks and even the Romans experienced, has not fallen to the lot of later nationalities. Successive revolutions and reformations have constituted the law of later progress, but the result has been a regeneration such as no nation of antiquity enjoyed.

The simple nature of the Teutons could not endure contact with the nations of antiquity. At first dazzled by the unexpected sight of so much magnificence, the Teutons endeavored to accommodate their new acquisitions to the measure of their own conceptions; this attempt resulted but too often in a wild passion for destruction which has still left traces of itself in the term “vandalism.” As their intellect became more expanded, this passion was transformed into an ungovernable craving for luxury. The former is illustrated in the great migrations, the latter is exemplified in the history of the Franks.

The free inhabitants of field and forest suffered most from the effects of their own victories; because, as has been justly remarked, in order to establish their dominion permanently the conquerors were themselves to a certain extent compelled to submit to a supreme leader during the long vacillations of the fortune of war. The advantages which they retained for themselves in opposition to the vanquished laid the foundations of the feudal system—a system which threatened to destroy the distinctive characteristic of the Teutonic nature, the feeling of personal independence, the consciousness of individual worth.

Influence of Christianity.—Too great importance must not be attached to the introduction of Christianity, for, as a general thing, the people accepted it with great reserve and considered only its practical advantages. Their intelligence, sharpened by experience, had freed itself to a large extent from the ancient traditional faith, and they hoped to find in the God of the Christians a more powerful agent to further their immediate objects than they had found in any of their national divinities. Frequently their acceptance of Christianity was merely a measure of policy. It is interesting to observe that where Christianity was accepted for such reasons it assumed a character in which these conceptions remained per-

manent; and that where, as in Lower Saxony, it was forced upon the people, the indelible effect is still seen in their stolid and unimpressionable temperament.¹

The extensive plans of the apostle Winfrid and their realization by Charlemagne, which built up the power and union of the Church in the Northern countries, did not at once produce an effect upon their civilization. Everywhere the Church had to make great concessions to the traditions of the people, and much of the old paganism remained under various forms. Individuals of deep feeling possessed themselves with great ardor of the real substance of the revealed religion, their reception of which partook of the character of a special consecration. The German cloisters in which such persons established a congenial home were soon distinguished from those of the Romance countries, and they developed features of the new civilization which would otherwise have been lost, but the full importance of which did not become apparent until later times.

The eleventh century was at hand before foundations had been laid upon which, partly in opposite conditions, the new culture was developed. The feudal system had divided the nations into masters and serfs, and between these two classes the inhabitants of the cities in the more favored countries were slowly advancing and planting the sparse seeds of a new liberty.

Especially in Germany, where rugged Nature too grudgingly supplied the indispensable requirements of life, both classes became possessed of a deep unrest, the one through a sense of insecurity, the other through discontent. The hopes of another life which the Church offered were some solace. Still, this earthly life required its satisfaction, and here too the Church was a friend to the race in its present misery. As, from the beginning, it had been prudent enough to spare as much as possible the ancient traditions by erecting its churches on the places of ancient worship, and by substituting its Christian feasts for the old pagan ones (Easter, *Ostern*, derives its name from *Ostara*, the Teutonic goddess of spring), so it did not disdain to unite in a proper manner church festivities with secular amusements and to garnish its services with worldly pomp. Strict as it was in regard to doctrines, it was in other respects lenient. For example, it took from the people their beloved rites of burial; severe prohibitions were enacted by the Carolingian kings against pagan burials, and during the Middle Ages it was deemed appropriate to consign the body to the earth wrapped simply in rags. On the other hand, the industrious and skilful inmates of the convents created and supplied needs of a higher order and compensated the inner life for the narrowness of the outer world. Fairs were originally associated with

¹ The very stubbornness with which the Saxons adhered to paganism after the other Teutonic nations had embraced Christianity would seem to indicate that lack of receptivity was already a national trait in the eighth century. It may be accounted for by their position in the rear of the great migratory column, and consequent want of contact with the influences, at once dissolvent and stimulative, of Roman civilization.—Ed.

church services, as is evident from their name *Messe* (*Kirmes*, "a fair," is derived from *Kirchmesse*, "church-mass").

While energetic measures were taken against the immorality of priests who, after officiating by day at the altar of the one God, went at night to mountain-tops or sacred groves to sacrifice to the old gods, the people were permitted to enjoy the festivities which they had inherited from their fathers. The reconciliation of the new religion with the national spirit of the people did not become complete until the religion was able to satisfy more fully than could the realities of daily life that deeply-rooted longing for an ultimate ideal which specially pertains to the Teutonic character.

However barren of external results the Crusades may have been, their influence on the inner life of the nations was none the less permanent. The struggle between paganism and Christianity, which still went on, though silently and with a certain languor, terminated at last in the complete victory of the latter. For the first time, as a result of the feeling of self-consciousness which sprang from deeds of pious valor, a sense of nationality, based on a purely Christian foundation, was created in the West. The imaginations of men received a powerful stimulus from the contemplation of wonders hitherto unknown; and although the ecstasy of religious enthusiasm had naturally to suffer rapid diminution, the feeling thus created was sufficiently permanent and vigorous to become the incentive to action for succeeding ages.

Social Position of Woman.—In consequence of this heightened sensibility, which indeed affected every phase of existence, woman regained her former honored position among the Teutonic nations. The high consideration which woman enjoyed in early times (p. 233), and which formed a salient feature in the primitive life of the nation, had been utterly lost in the overwhelming stress of the great migrations. The Church had not restored it. In fact, apart from spiritual considerations, the position of woman had been better established in the pagan marriage than in the Christian sacrament; for the Church, confounding self-renunciation with chastity, ranked celibacy above that union of the sexes which both natural and divine laws demand. Sentiment, however, considered the charms of the object more than the object itself, and love was converted into the well-known service of the Minnesingers, which found also a religious expression in the veneration of the Blessed Virgin.

This phase of life in the twelfth and thirteenth centuries is made known to us chiefly by the school of national poetry which sprang up under the influence of the spirit of the times. But the historian of culture occupies a different position from that of the student of literature: the former finds sufficient evidence to prove that fact and fiction have diverged widely respecting the subject under consideration as well as in many other particulars. The regions of Southern France, with their voluptuous climate and scenery, offered an appropriate field for the Minnesingers. In Germany they remained an exotic institution. What they

sang about the grace of the German women represented their own refined and exalted sentiments rather than the actual qualities of their heroines.

As we have already said (p. 233), the women of Germany throughout the Middle Ages were a very sedate class, without sufficient strength of character or sufficient self-consciousness to make their influence felt externally. Their life was monotonous and narrow. In the castles dullness reigned supreme, interrupted for the men by the excitement of the chase and feuds, for the women only by occasional visits. In the cities the struggles between the various classes concerned only the men, while in the huts of the peasantry misery weighed so heavily upon both husband and wife that even the consolation of bearing it together offered little relief. The poetry of the period is contradicted by further considerations, not less weighty, which prove that this question of the relation of the sexes was often treated, when brought face to face with practical life, in a fashion quite characteristic of the ancient Teutons. For example, up to the time when they became Protestants the Frieslanders energetically resisted the papal law of celibacy and refused to tolerate unmarried priests.

At the same time, the phase which the romantic period of knight-errantry assumed on German soil deserves attention. Plate 44 (*fig. 1*) contains an illustration belonging to this epoch of German history. It represents a knight who is about to depart on his travels receiving his helmet from his lady. It is copied from the so-called *Manessian Codex*, in a collection of love-songs which was made at Strassburg, but is now in Paris.

Italian Social Life.—In Italy the condition of society was somewhat different, for in spite of all political storms the influence of antiquity upon it had never died out. Moreover, the growth of the Roman hierarchy secured to that land dominion over the whole world for almost another thousand years, made it the centre of intellectual movements, and by the wealth which flowed from all parts of the West gave it the means to gratify the demands of its increasing culture. Consequently, in point of social culture, and especially of artistic development, Italy was a century in advance of the countries north of the Alps, and, so far as was allowed by the slight international intercourse of the Middle Ages, was their model, as France has been in later times.

Figure 2 represents a scene from Italian social life taken from a wall-painting by Orcagna. A number of ladies and gentlemen are seated on a grassy bank, enjoying themselves with music and conversation. Two of the gentlemen carry falcons in their hands, for falcons were a frequent accompaniment of outdoor amusements, as was the case also in other countries. We find in pictures these birds even on the hands of ladies. One of the ladies is fondling a lap-dog, a form of amusement so much in vogue that these little pets are sometimes found immortalized on the tombstones of their mistresses. A second lady is playing on a cithern-like instrument,

which at a later period gave place to the lute or mandolin, as shown in Figure 5 (*pl.* 44).

We cannot attempt to give a complete picture of the brilliant life developed under the action of three distinct influences—that of the papal hierarchy, realizing in the fulness of its power the gigantic conceptions of Gregory VII. and Innocent III.; that of the various Italian princes, turbulent in their external relations, but seeking in their courts to foster a refinement of manners and a cultured intercourse; and that of the civic republics, sturdily maintaining their own independence, and thus representing the conservative principle. But many a brilliant ray from the South had already penetrated the North under the Hohenstaufens, and had helped to widen the horizon, to warm the sentiment, and to ennoble the impulses of the nation. Though from a merely political standpoint the German expeditions to Rome may perhaps be justly criticised,¹ yet from the standpoint of civilization they were of the greatest importance, and no potent voice was raised against them in the ages in which they took place. The Germans imbibed therefrom the very substance of intellectual life, the appreciation of existence which their deep longings and wide powers of comprehension had sought in vain in the dull monotony of their own home.

That the German character would lose any of its distinctive traits by contact with foreign countries was a danger which existed as little then as later when it came under French influence. On the contrary, the talent for embodying their conceptions in beautiful forms, which has always been a characteristic of the Southern nations, would have been a precious gain for the Germans if they had been able to appropriate it. But the predominance of feeling in the German nature, so essential for the attainment of that universality of intellectual perceptions which is its peculiar distinction, demanded as its first condition an enlargement of the field of vision and of aspirations in order to gain validity and complete development.

Mohammedan Culture.—What Italy was to Germany, that the Moorish kingdoms were to France and to the Christian parts of Spain. The religious enthusiasm of the Moors led to higher conceptions of life, and bloomed forth in such a diffusion of material prosperity over the Peninsula as it had not before enjoyed and has never since experienced. Their glowing Oriental imagination enkindled the world of sentiment, and, to some extent, of thought, which, while it rapidly became exhausted by its own fire and glow, yet continued to cast long-enduring reflections over the neighboring Christian states. There, in truth, originated that knighthood of romance which, extending to the Northern countries, became the starting-point of a higher culture that gradually permeated all classes of

¹ It was customary for the newly-elected emperor to visit Rome for the purpose of being crowned by the pope, and there were frequent expeditions to Italy for other objects, peaceful or hostile. It is a debated point with modern historians whether the connection of Germany with the Holy Roman Empire was a hindrance or an aid to national development.—ED.

society. The impulses which led to the institution of chivalry were indeed due to external causes, but its real significance, which far exceeded the reach of Mohammedan culture, was derived from the character of the nations among whom it gained a foothold.

But in order that our dissertations may follow the succession of events, we shall here trace the reaction which necessarily followed upon the unnatural condition of society.

The Nobility.—During the flourishing period of the Middle Ages the nobility constituted, from a social standpoint, the highest class in the empire. They alone formed the mounted soldiery upon whom the success of every battle depended, and they thus came to regard themselves as the defenders of their country. After the emperor Conrad II. had made the smaller fiefs hereditary, all the nobles of every grade were enabled to give themselves up to the undisturbed enjoyment of their privileges. The higher instincts of the Teuton found in this freedom of rank an appropriate basis upon which to attain complete development with undiminished creative power.

The distinction of this class into the higher and the lower nobility was modified by the consciousness of a common vocation, and by the principles of honor therefrom developed, and in the higher community of an ideal knighthood those degrees of rank and power were lost sight of which divided the nobles holding immediately of the emperor, and having almost the dignity of princes, from the so-called "ministerial nobles," who held their fiefs under a prince of the empire or some member of the higher nobility. But when the nobles lost their sense of privileged position they also lost the highest incentive to action. The unfortunate period of the Interregnum, which loosened the bonds and disorganized all ranks of society, seriously shattered the institution of the nobility. Still more fatal to the nobility was the growing power of the princes of the empire built upon the ruins of the old national dukedoms; and this, together with the increasing importance of the cities, combined to throw the influence of the upper classes more and more into the shade.

But the severest blow fell upon the knightly class when the change in the military system assigned the most important part in war to the infantry, and when by the introduction of firearms the knightly lance had been rendered impotent. Thus, losing the solidarity of their class, and becoming in many instances impoverished by the extravagance and display by which they had felt obliged to keep up their state, the nobles were compelled to occupy themselves with the ordinary concerns of life, and to sacrifice their ideal aims and romantic dreams of glory.

As the serfs or "poor people" (as they had long been officially termed) could no longer be oppressed, many of the nobles sought a share in the wealth of the cities by becoming burghers and engaging in trade. They did not, as has often been erroneously supposed, give rise to the class of "merchant princes," with whom, indeed, though sometimes allied in marriage, they were seldom united in legal equality. Others of them

remained on their country estates and supported themselves by plundering or marauding, or, somewhat less dishonestly, by participating as leaders in the feuds of the wealthy city upstarts, for which service they demanded a heavy recompense. But when at last the cities had become sufficiently strong to carry on war, and, united in confederations, had succeeded in applying the torch to the robber castles, and especially when the stronger imperial polity initiated by Maximilian I. had put an end to the pursuit of rapine, the nobles betook themselves to the court of the sovereign, where various offices afforded them a sufficient recompense.

The morals of the nobility had become more and more corrupt; their ancient valor had degenerated into mere bravado; and drunkenness, the cardinal vice of the Germans, had wrought great havoc in their midst. The better elements among the nobility remained in the country, and attained prosperity by adopting a rational system of agriculture in place of the former exhaustive method of treating the soil, and they became the saviors of society when the courts, infected by French libertinism, and civic life, decaying under the restrictions of an obsolete state of society, had no aims or principles but such as were narrow and corrupt.

Court Life in the strict sense had originated in Italy. There it assumed a Byzantine character—that is, a tendency to the deification of the monarch. A glimpse of it is shown in Figure 3 (*pl.* 44), which is copied from a miniature painting of the well-known *Codex Grimani*. The sovereign is seen eating alone, with head covered, surrounded by courtiers, while his counsellors are making their reports to him. The real coarseness of manners which was glossed over by ceremonial is betrayed by the presence of the two dogs. The time of the sovereign, in so far as it was not employed in warding off danger from his traditional prerogatives, was devoted to pleasure; and it must have been considered a blessing of fortune if the sovereign personally gave himself the slightest concern about the moral welfare of his court or country.

Court ceremonial attained a further development at the rich Burgundian court. Thence it passed into France, where it was codified into a complete system. In fact, during the reign of Louis XIV. it assumed the nature of a cult and became the model for all other European countries. We know from history how French court life fostered the doctrine of absolutism, and how its lofty formalities were in fact a mere superficial cover for underlying frivolity and gross immorality. Nevertheless, it contained an element of civilization that has hitherto been scarcely recognized.

Social Influence of the Court.—The aspirations for deification which at first affected the French sovereigns afterward spread to other crowned heads—indeed, did not remain limited to courts alone, which were of themselves small enough in Germany, but easily spread to the lower ranks. Not only did every petty nobleman endeavor so far as lay in his power to establish a miniature model of the French court; the passion for becoming something more than was required by mere outward circum-

stances had taken a firm foothold among all classes of society, and hardly any one of them was so depressed as not to be stirred by the desire of rising above a state of bare and empty existence, of surrounding life with some ornamentation.

The house, which up to this time had retained much of the character of a mere place of shelter, or at best but clumsily exhibited the owner's wealth, gradually assumed the character of the modern dwelling with its tasteful arrangement and hallowed associations. The earth was no longer regarded as intended simply to nourish its inhabitants, or at most to minister to the taste of the palate; the eye, too, began to make demands for satisfaction; and where poverty of soil refused this, the landscape was enriched by the labors of art. A period came when parks were laid out and places of amusement established in the neighborhood of palaces and cities, when private gardens were ornamented with bosquets, and even with hot-houses, and when roads were beautified with long avenues of stately poplars, which the prosaic spirit of modern times has exchanged for its meagre fruit trees.

An æsthetic element made its appearance in the life of the nations—a factor which had thus far been altogether wanting, and which was far from being equalled in compass by the romantic fancies of the Middle Ages. Far from forming any connection with the general corruption which prevailed at the inception of the movement, it became one of the most important agencies in elevating the spirit of the times, and the basis on which our highest culture was raised, although the latter derived force and material from other sources as well. But to investigate these we shall have to go back several centuries in our history.

The Cities.—We have already referred (p. 271) to the historical occurrences which contributed to the advance of the cities. Their prosperity was the reward of industry and skill. As their wealth increased with even unexpected rapidity, the cities did not refrain from seeking satisfaction outside of mere material enjoyments. The circumstances of such endeavors were conditioned by the fact that their prosperity, although it began during the course of the Middle Ages, did not bear its developed fruit until an entirely different epoch.

Just as the nobles by means of their strong castles sought to preserve for themselves and their posterity the advantages which their merit or their fortune had acquired, so the burghers surrounded their cities with walls and trenches in order to acquire that sense of security which is the first condition of comfort. And just as in their best period the nobles had testified their gratitude to God and to the world by the erection of churches and monasteries, so likewise the burghers filled their cities with stately cathedrals and charitable institutions.

But the romance of knighthood scarcely found an entrance into city life. It is true that tournaments were held in the market-places, but these were especially intended for the entertainment of princely guests. The poetry of the courts was represented in the cities by the songs of the

Meistersingers; but the clang of the hammer and the puffing of the bellows were too noticeable in the latter to allow them the stamp of true poetry. Nevertheless, there was an ideal tendency in city life. This is evident from the portraits belonging to the fifteenth century, all of which exhibit an expression of genuine piety and a religious mood characteristic of that age. An echo of paganism lingered among the rural classes, and perhaps vivified their life, but over the better classes of the cities the Church had been completely triumphant, and had established among them a community devoted to her interests. But this very devotion to the actual substance of faith had momentous consequences for its external organization, the Church.

The Reformation.—Toward the end of the fifteenth century signs of hostile criticism and of bold scepticism began to multiply. Men began to compare the substance of their faith with the form or institution in which it had become embodied. They began to examine what was contained in the conception of the highest good as enunciated by the Church, and which thus far had been accepted without question.

The Church had quietly permitted many a reformation in the Romance countries even before the appearance of Luther. In Germany, however, it absolutely refused to make the slightest concession to the most just demands. When a positive decision had to be made, the Teutonic principle of private judgment unrestrainably forced itself to the front, and became, because coupled with a matter affecting the entire domain of Christianity, a question involving the moral development of the world. What Luther actually accomplished in the theological domain of mere dogma may only have been a refinement upon existing tenets, and how far he was in accord with the spirit of the Founder of the religion will perhaps always remain an open question. But his great merit is that he initiated energetic action. His course was a proclamation that mankind had attained its majority—a claim of man's right to have a voice in the control of that which most nearly concerns him. The foundation of that claim had long been laid in the German character, and the real motive of Luther's action must thereby be sought and explained. What have been adduced as causes and auxiliaries of the Reformation, such as Gutenberg's invention of printing, the Renaissance and the consequent widening of the intellect, the intercourse with newly-discovered parts of the globe,—all these no doubt prepared the soil for the reception of the seed, but they did not give it fecundity.

The Reformation did not spring from the humanism of the sixteenth century. That at most produced auxiliaries for the cause, but it also produced the orthodox zealots who succeeded in destroying much of the work before it had even been completed. The true essence of the Reformation was a breath from the forests of those countries which Tacitus describes—an emancipation of the Teutonic spirit, which had grown into self-consciousness under the peaceful influence of Rome, but which was thenceforth to shape its course in a constant struggle with it.

State of Society at this Period.—It was high time that new foundations should be provided for the further development of European society, since the signs most inimical to a healthy state of things were increasing in an alarming degree. Culture was declining, and it had no hold on the masses of the population, who were able neither to contribute to it nor to receive any of its benefits. Figure 4 (*pl.* 44), copied from wood-cuts by one of the foremost artists of that age, Hans Sebald Beham, gives us a glimpse into the actual state of society. In the background are seen brigands who have set fire to a village and plundered travellers; in the foreground paupers are receiving food at a monastery-door. The former species of disorder might indeed be a mere robbery or an episode in the private feuds which were customary in those times.

Such feuds were so barbarous in the sixteenth century that not only the active partisans, but also all the friends and retainers of the combatants, were involved; the territories of both parties were laid waste with fire, robbery, and murder; wealthy persons were held in cruel bondage until a heavy ransom was paid for their release. The rural population were the chief sufferers from such disorders, for they lacked the defences of the cities. The churchyards of the larger villages were, it is true, usually provided with defences dating from an early period, but the inroads of robbers were often so unexpected that flight or preservation was impossible. We have already spoken (*p.* 275) of the reprisals taken by the cities.

Not only did the nobility wage war among themselves and city arm against city, but even different classes or associations or individuals in the same community engaged in deadly strife. Such evils could be effectually remedied only when local governments became stronger and local police were established. The imperial government was too distant to oversee, much more to control, all that went on in its vast territory. The empire would have fallen to pieces had it not been for such local authorities. The question of order was paramount to that of unity. The cities, too, would soon have degenerated in their selfish isolation had it not been for the healthy accessions they received from the country.

The Peasantry.—The preservation and elevation of the peasantry demanded attention in proportion to its backward and deplorable condition. The Church was again the savior of this oppressed class, not only by the hopes it gave them of eternal life when there should be neither master nor servant, but also by interesting itself in their social condition. Its constitution had a democratic element. Its orders were open to the lowest peasant, and his promotion to its highest honors depended entirely upon his personal qualities and favorable circumstances. Many episcopal seats, even those of the ecclesiastical electors and the papal throne itself, have been occupied, as is well known, by men whose birth gave no promise of their future greatness. Every serf who took part in the Crusades was, by command of the pope, made a freeman, and many of the nobles on taking the cross liberated of their own accord, personally or by testa-

ment, their serfs at their departure. Many serfs absconded to the cities, either by breaking through established law or by availing themselves of the opportunity of some feud. They were treated as "inhabitants of the pale" (*Pfahlbürger*); that is, those who lived outside the walls of the city, but within its boundary, and enjoyed some of its privileges.

Gradually, with widening knowledge, the relations of superior and vassal become more humane, or at least were based on sounder principles of economy. These relations had always varied according to the circumstances of the different districts, but nowhere had they degenerated into real slavery. By many lords the obligations of the serfs were limited to fixed services and payments. The latter were made in kind or in money, and gradually became less onerous as money cheapened—a phenomenon that did not originate in modern times.

The new princes of the empire, however, at first looked upon their subjects entirely in the light of the old feudal system, and there were some among them, even as late as the eighteenth century, who tried by law and force to reduce the overburdened peasants to a condition little higher than that of their hunting-dogs. Still, it was the princes with whom arrangements were finally made for releasing the serfs from bondage. In some regions, such as Friesland and Lower Saxony, an independent peasant class had always existed; in others, Swabia, for example, it needed the terrors of the French Revolution to soften the disposition of the rulers.¹

Outlaws.—About the end of the Middle Ages tramps and vagabonds formed a class recruited from individuals whose social position had been forfeited. Banishment for life or for a term of years, coupled with severe threats against return, was for minor offences a usual form of punishment in the cities. Such individuals were simply expelled, and consequently, if they had no connections elsewhere, were compelled to roam about the country. To this class were added absconding serfs, disbanded soldiers, and the rabble of all other classes. With something like association they molested the smaller settlements by begging and stealing, but principally became troublesome on account of their large numbers.

Society of Modern Times.—The evidences of the progress of civilization since the Reformation are to be sought principally in the cities. Legal regulations were thoroughly systematized and tolerably well enforced. Social intercourse advanced as the more highly cultured elements obtained a foothold among the citizens. Reactions necessarily took place, and at first these were not edifying to contemplate. The newly-acquired wealth led to gross sensuality, complaints about which occur as early as the fifteenth century; societies were even formed among all classes for the systematic practice of debaucheries. But the evil worked its own cure. Vice exhausted the wealth of the cities; the city aristocracies impoverished

¹ In Prussia the abolition of serfdom did not take place till 1807, and indeed can hardly be said to have been completed till 1811. Such measures, however, were the result not so much of the "terrors" of the French Revolution as of the ideas in which it originated and which it helped to diffuse.—ED.

themselves by their competition with the nobles; and extravagance was necessarily followed by economy.

The discovery of a passage around Africa by way of the Cape of Good Hope, and the development of Spanish, Portuguese, and finally of English commerce, contributed with other circumstances to bring the prosperity of the German cities within well-ordered limits. The Thirty Years' War completed the work, and henceforth the cities became the cradles of true human civilization, the dwelling-places of civic virtue and domestic happiness, which will constitute their glory for ever.

Figure 5 (*pl.* 44), from an old copper-plate, showing a carnival banquet at the end of the sixteenth century, gives us a suggestive glimpse of a scene of revelry at that period. The pretexts for such banquets were especially based upon such feasts of the calendar as could by any possibility be made an occasion for them—just as the art of that age, no less inclined to sensuality, attempted to justify the pictorial representation of such scenes by connecting them with the history of the Prodigal Son. Otherwise, as is also evident from our illustration, there was little formality of manners to serve as a mask for licentiousness. An intellectual counterpoise existed as yet only in a slight degree. While in the Romance countries, owing to the dominating influence of mediæval fancies, frivolity reigned unchecked, in Protestant Germany a rigid, intolerant orthodoxy enslaved the mind without being able to fetter the senses.

A step forward was taken when society began to pay attention to outward forms. Nor should we regret that it followed French models, which were known even before the Thirty Years' War. At any rate, an impulse was given which otherwise would have been lacking: it offered the best form possible under existing circumstances; and if the sterile soil upon which German character had grown to manhood had not developed a high degree of creative power, it still was able to give a national tone to every fashion that was adopted.

Figure 6 (a ballroom scene, after a copper-plate by Abraham Boss) exhibits fashionable society about the middle of the seventeenth century. The manners are affected and perhaps stiff, but there is evidence of a decided tendency to rise above the level of mere natural inclinations. The regard for forms was by no means confined to bodily bearing, to speech, or to manners. It gave interest to many things, originated occupations and introduced ideas which were formerly unknown, and which, being of external origin, are to be reckoned as belonging to form and as matters of fashion, which only gradually stimulated heart and head to productive endeavors.

The development progressed throughout the long and dreadful war, at the close of which a wholly German conception of social affairs prevailed, though still following the French model, which in its turn was of course largely influenced by Italy and Spain. As is shown even by the universal use of dark-colored clothes, the events of the immediately pre-

ceding period had impressed a somewhat gloomy seriousness upon the general spirit. Men were earnest, self-composed, and guided by morality and honor. There never was a time in which German family and social life had been so penetrated by fidelity as in the latter half of the seventeenth century. Severe and strict as manners were, the people deserve all the more praise for having submitted to them.

The opinion had long become prevalent that Germany was coming into possession of something original and national when, still under foreign guidance, and in proportion to the increase of knowledge, the narrow bands were loosened and a larger measure of freedom began to be enjoyed. During the entire course of the eighteenth century the most important and far-reaching influences were at work; it is true they made hardly an audible stir, but they disturbed the surface so slightly because the subjects with which they were engaged were the deepest foundations of ethico-intellectual life. Consciously and unconsciously, the object of all effort was something that should bring satisfaction with one's self and with others. This was the aim of the sentimental epoch, as well as of the "Storm-and-Stress" period in Germany, the fruit of which had necessarily to result in the production of the fairest humanity, because the goal was kept in view and the struggle to reach it was sincere. Manifold were the errors in the use of means and the choice of methods: mysticism and alchemy, pietism and enlightenment, pedantry and gallantry, existed, but they could not permanently lead astray a world in which every one, with a few marked exceptions, was seeking the good of all and not of self alone.

The bloom of German literature, the development of music, in which the most hidden springs of the German character are revealed to a height and depth never before dreamt of, are the unmistakable products of this stage of civilization. Such phenomena must have had an adequate cause in the national and social life in which they appeared, and though the historian, while not in doubt regarding cause and effect, cannot reproduce the vast treasures of silent virtues and quiet happiness which have sunk in the ocean of time, he knows that in spite of all corruption they actually existed. One example will suffice: the famous landgravine, Caroline of Hesse, won the admiration of the cynical Voltaire himself, who blessed heaven and earth for having produced such a woman.

The close of the eighteenth century and the beginning of the present witnessed still another advance in the world of social intercourse. Independently of the influence of the French political clubs, which were themselves simply an outcome of the ruling passion, and which in consequence of the stress of events occupied themselves with state affairs, men generally began to feel the need of mutual intercourse, and persons engaged in similar pursuits realized that their individual interests would better be promoted by united efforts. These feelings resulted in the establishment and universal spread of associations, such as clubs, assemblies, casinos, and similar institutions. Such modes of entertainment and social inter-

course had long existed in the Romance countries, where private houses were not sufficiently well ordered or neat to entertain the guest within their own walls. Their introduction into Germany detracted somewhat from family sociability, but they had the effect of developing the art of conversation, which had always been characterized by reserve, though not lacking in refinement, especially in North Germany, where the women participated more largely in society.

Literary, musical, and even dramatic studies formed an important object of these meetings, and reacted beneficially on the family circle. The interest in literature, in art, and in purely intellectual subjects was exalted by the influence of such societies to a point never before or since attained. Polite society constructed an ideal world over the rotten political fabric of the state and the sad condition of real life. A new drama by Schiller comforted it for the loss of a battle. But we must not find fault with such transcendentalism, for all that is valuable in the modern state and society had its roots in that growth of German intellect and sentiment.

What grandeur that most important epoch—which was soon to be put to proof by a trial as of fire—was able to bring forth is amply seen in its long roll of statesmen, warriors, scholars, and artists, and its galaxy of noble women, headed by Queen Louisa of Prussia, who exemplified the entire compass of culture in their lives and actions, and showed that the prophetesses and heroines of the ancient Teutons were not an extinct race; and as the deeds of the earlier class had illustrated what was most noble during the infancy of the nation, so the influence of the later, after its culture had been developed, became the incentive to the highest morality and duty.

Figures 7 and 8 (*pl.* 44), copied from contemporary illustrations, give us a glimpse of the social life of the period: although its depth and completeness are not at once apparent, its character is sufficiently suggested by the scenes represented. The religious tendency of the eighteenth century, which permitted the devotional exercises of the Church to be celebrated in the family circle also, was in keeping with an age that allowed the citizen no other liberty than that of thought and feeling. The unending repetitions of psalms, services, and morning and evening devotions sound like the cock's crow of the day which was to initiate worship in spirit and in truth. The more worldly tone which crept in later, and the games of cards which since the beginning of this century have been an important form of social entertainment, also had a positive value. Without such interruption, conversation, just because it did not concern itself with matters of daily life, would have degenerated into stagnation or formality.

The society of that day, petty as it appears to us, contained the silent germs of an active and influential age, and sufficient vitality to transmit them to the succeeding period. We must remember that the feeling of well-being, different from the dull vegetation of ignorance, is more

receptive and communicative than excited passion, which fails of effect precisely in proportion to its preternatural stimulation.

It remains for us, aided by the illustrations of our plates, to bring into bolder relief, by means of concrete examples, the internal and formal characteristics of the periods of which we have spoken.

Training of Youth.—Girls were brought up exclusively under the supervision of the mother and instructed in her occupations, or at best were sent to a convent to be educated. The boys of the upper classes were sent to other noble houses, or to the petty or larger courts, to be trained in the arts of chivalry. The youth first served his master as a page, and learned in the stables the care of horses, and in the courtyard of the castle the art of riding and the use of arms. Intellectual training did not become general previous to the sixteenth century. In time the novice became an esquire, in token of which he received a sword. Then it became his duty to accompany his knight or prince to the chase, to tournaments, and to war. Fidelity and devotion to his chief constituted his first duty on every occasion; he carried his weapons to the battlefield: did it happen to him to protect his master by sword or shield, or perhaps even to save his life, he earned the greatest glory.

Knighthood.—Having fulfilled the term of his apprenticeship (which usually terminated with his twenty-first year), he was knighted, generally on the occasion of a battle or some special event. Religious consecration preceded the ceremony of knighting: the candidate was then clad in his coat of mail; his gloves and spurs were bestowed by a noble lady; kneeling, he received three strokes with the flat of a naked sword from the hand of a knight or of a monarch; and he then swore to perform faithfully all knightly duties, to defend persecuted virtue, and especially widows and orphans, and to use his sword in behalf of religion against the infidels. The knight who upon the completion of his apprenticeship did not possess means of support sought some new service; but if he had property he married and devoted himself to the administration of his estates. Knighthood was not necessarily the privilege of all nobles, or even of all princes; for example, Count William of Holland was not knighted until immediately before his coronation.

Knight-errantry, or the custom of knights who wandered from tournament to tournament upholding the name and fame of some chosen mistress, was an institution of the Romance countries. It existed to a very slight degree in Germany, and only as a feeble imitation of foreign manners. Ulrich von Liechtenstein, who has left an autobiography in verse, seems in his devotion to the gentle sex to have been a real German Don Quixote.

The mode of life of the nobles upon their own estates, or even at some royal court, was, as a general thing, frugal and simple. Even countesses and duchesses concerned themselves about the kitchen, the cellar, and the care of domestic animals. They even exercised the physician's art among the inmates and retainers of the castle. In later times they

attended to the education of the children, and in the absence of their lord supplied his place in the general management of affairs. In Protestant countries they even conducted public worship.

The lords themselves seem to have inherited the ancient Teutonic antipathy to routine labor, which they left to assistants while they themselves were employed in more congenial occupations. That they acquired renown by improving the breed of horses is often mentioned, more frequently still their success in training dogs and falcons for the chase.

Hunting was the favorite pastime in times of peace; women even participated in it down to the last century. Field and forest—the latter of which occupied far more territory than at present—supplied game of all kinds, often in hardly credible abundance. Wild-boars and deer abounded, and bears and wolves were not unusual. In Prussia even bisons and elks were found. It is narrated that the landgrave Philip of Hesse and his companions slew over a thousand wild-boars and one hundred and fifty deer in a single hunt. Down to the seventeenth century the cross-bow was the principal weapon of the chase; after that time guns, which were often finely carved and ornamented with inlaid work and gilding, were used. The javelin was used for hunting boars and bears (*pl.* 43, *fig.* 11).

A favorite form of hunting, especially with ladies, was the pursuit of herons by trained falcons. The hunting-party was mounted, and accompanied by falconers on foot carrying the falcons, whose heads were hooded. When the prey was sighted the hood was removed and the falcon set free. It at once rose in pursuit, and the mid-air battle which ensued generally ended in its victory. This form of sport died out on account of the scarcity of herons which resulted from its pursuit. When it was proposed to obtain large supplies of game as stores for kitchen and pantry, certain portions of woods were surrounded with nets, into which the prey was driven, and then killed (*fig.* 11).

The eighteenth century made the chase the means of gratifying a barbarous taste for blood. Nothing more plainly shows the real brutality of the higher classes, notwithstanding their brilliant state, than their methods of hunting. We speak only of the higher classes, for the middle classes were developing a genuine refinement of thought and sentiment. A number of deer, fawn, etc. were driven into an enclosure, or, to make the sport more piquant, into a lake, and then shot down from a secure gallery by these noble hunters. In the stag-hunt the animal was pursued with horses until it sank exhausted, an easy prey to its pursuers.

The so-called "fox-baiting" was revolting in the extreme. That no one in that age raised his voice against it was perhaps due to the fact that the different classes lived apart and one scarcely knew how the others lived. A number of small animals, such as foxes, badgers, martens, weasels, etc., were let loose in an enclosed place (generally the courtyard of the castle). Dogs were set upon them, while the hunters held loose bags, into

which finally the wretched creatures ran for safety. They were then tossed in the air and knocked about until killed. Such sport was witnessed and applauded by gentlemen and noble ladies looking on from the balconies of the castle.

Social Intercourse.—The interchange of social visits formed an agreeable interruption to the monotony of life. During the Middle Ages, means of communication being rare and the relations of near neighbors usually hostile, visitors generally arrived without previous announcement. When a party approached the drawbridge of the castle, the fact was proclaimed to the inmates by the warden of the tower. The strangers halted at the gate without dismounting until assured of reception. Their rank and dignity decided how far the master of the castle should advance to meet them. Having entered the yard, their horses were taken in charge by servants, and they themselves, after the first salutation, were conducted to the guest-chamber. Refreshments, which always included wine or mead, were there served to them. The guests and host met again at the mid-day meal, which was eaten at about eleven o'clock, or at the evening meal, when conversation was unrestrained and the cup circulated freely. The women retired early, but the men often remained together until late at night. When life was younger and the affections fresher, the leavetaking was even more ceremonious than the reception, and the parting or "stirrup cup" was no more wanting than the cup of welcome.

Royal Receptions.—The visits of princes were always the occasion of great festivities, such as balls, tournaments, ring-tilting, fireworks, and dramatic performances, of all of which we shall hereafter speak (p. 296 *sq.*) at greater length. When the emperor visited a city he was received with great pomp. The burgomaster and council met him at some distance outside the gates; a canopy was borne over him; the procession passed through open lines of the civil guards, guilds, etc. to his palace if he had a private palace there (as was the case in Nuremberg), or to the house of the rich patrician where he was to lodge.

A similar reception was given to foreign princes if the city sought their favor. Treaties of peace were often cemented by a mutual interchange of invitations. In any case, wine, food for the horses, in Lent fish, and, when greater honors were intended, a golden cup filled with ducats, were presented to the guests. The ladies of the prince's household, if present, and the chief officials, if their services were sought, also expected presents. These *honoraria*, which are found carefully recorded in the archives of every city, constituted no small item of expense to places that were frequently visited. The patricians often politely retaliated by inviting their expensive guests to weddings or to be godfathers, etc., thus obliging them to show their gratitude by making presents in return.

Private Feasts.—Family feasts, such as betrothals, weddings, baptisms, etc., were celebrated more frequently in the cities, where the larger cir-

cles of relationship made them more elaborate, than in the country. Birthday feasts, which in Protestant countries took the place of the celebration of the patron saint, were of later introduction. All these occasions were marked by great extravagance and luxury, to which in the imperial cities legislation attempted to set bounds—a thing not so practicable in the country, and unknown, of course, at the courts. At the wedding of Duke Ulrich of Wurtemberg with the princess Sabina of Bavaria in 1511, no less than seven thousand guests were entertained at Stuttgart. One hundred and thirty-six oxen and eighteen hundred calves were slaughtered for food; six thousand bushels of wheat were required by the baker; and red and white wines flowed unceasingly day and night from two reservoirs.

Æsthetic Pleasures: Balls.—From the close of the sixteenth century æsthetic pleasures began to find a place beside the coarser enjoyments of feasting and drinking. Among the former, dancing-parties played an important part, and were even then called balls. The name, as well as the amusement itself, is derived from the games of ball and shuttlecock, which were enlivened by the singing and evolutions of the players. These movements, after a greater development, finally became all-important at such amusements; originally they consisted merely in the alternate forward and backward marching of couples arranged in rows, this measured movement being interrupted by occasional skipping. In time the irregular springs were themselves subjected to strict rules, the ball-playing was omitted, and the real dance came into existence. In the evening, in order to beautify and illuminate the scene, torch-bearers were introduced who led the dance. In place of the ball-playing, masks and allegories were sometimes introduced.

Figure 1 (*pl.* 45) is a scene from a ball given by the archduke (afterward emperor) Maximilian II. in 1560 in honor of the count palatine Albrecht during his visit to Vienna. The ball and other festivities connected with his visit were, in accordance with the custom of that time, recorded and illustrated in a special book. We reproduce from that source Figure 2, which represents a tournament. No contemporary picture of the mediæval tournaments is extant, and hence this illustration, though its subject must have been only an imitation of the earlier tournaments, is valuable.

Tournaments.—Originally, perhaps, only exercises in riding, the tournaments became in France contests of strength and of skill, and in that form were introduced into Germany in the twelfth century. During the "golden age" of chivalry only persons of ascertained nobility and of blameless character could participate in them, and hence they were always preceded by a scrutiny of the contestants' coats of arms. They were governed by fixed laws, the violation of which involved punishment and disgrace. Heralds (*fig.* 3), each wearing his master's coat of arms on his peculiar costume, constables, and functionaries of various grades, all in appropriate colors, had charge of the proceedings. Fools and clowns,

who brought the ridiculous into relief upon all festive occasions, plied their trade also at the expense of the participants in the tourney.

The knights fought either singly or in troops. The weapons consisted of lances, swords, or maces, the latter intended simply to deprive the helmets of their ornamentation; the former were sharp-pointed if the combat were real, otherwise the points were blunted. The armor, more complete than that used in war, extended even to the steed. Sometimes the horses were cased in mail, but in the lance-tilts, which were the usual form of tournament, they were merely covered with cloths (*pl. 44, fig. 1*) adapted to the outlines of the body, even covering the eyes, so as to prevent their shying. The shields and helmets of the knights, and even the coverings of the steeds, were decorated with coats of arms, allegorical devices, and even comical pictures.

At tournaments of lance-breaking (*pl. 45, fig. 2*) the participants were separated by a boarding, while in other cases there was no barrier except that which excluded the spectators from the lists. The guests of rank occupied tribunes, the principal one being reserved for the lady who was to bestow the guerdon on the winner. In the beginning the prizes consisted of gold chaplets, chains, etc., and later probably of more substantial rewards.

After the decline of chivalry the emperor Maximilian I. made many petty regulations concerning tournaments which refined away their genuine spirit. As serious and occasionally fatal accidents resulted from these sports (for even battle-axes were sometimes used), they were much modified in the sixteenth century, and became mere exhibitions of skill. In this form the competitors had for an opponent a wooden figure of a Turk, or else they strove to catch on their spear-points a ring hung up for the purpose; and, though the victory was not won with danger, it was applauded as vigorously as were the combats of old. This sport was called "ring-tilting" or *carrousel*. Its last form is that of the flying wooden horses which are usually found at fairs, and which are the last relic of the once gallant sports of chivalry.

Fireworks.—Pyrotechnic displays constituted another class of entertainments; these reached their culmination about the close of the seventeenth century. Attempts were made at an early period to use gunpowder for other than hostile purposes. We find the elements of the pyrotechnic art as early as the fifteenth century. The next age was not satisfied with the mere contrast of light and darkness or the play of colors. The passion of the age for allegorical scenes found expression also in displays of fireworks. The manner in which these were carried out can be most readily understood from the description of our illustration (*pl. 45, fig. 4*), a scene from the festivities given by the elector John George II. at the assembly of the royal family of Saxony in Dresden.

The piece is intended to represent the battle of Hercules with Cerberus and the gods of the nether world—a subject which presented many opportunities for fine effects of light. An explanation in verse declares that the

god who had freed the world from monsters had come to Dresden to deliver the good city from its vices. The contest was dramatically represented by means of automata in six scenes. The booming of cannon and firing of rockets and crackers initiated the display, enlivened the interludes, and completed the performance. The alternately advancing and receding figures breathed forth flames of fire, while Hercules brandished his club and the Furies shook their glowing serpents. In our picture the hero is seen rushing with a blazing torch upon the Furies, who occupy the platform, which is surmounted by three revolving wheels of fire, while his earthly companions in Roman costume stand opposite Cerberus and the mouth of hell, where they are opposed by a similar number of devils in the form of satyrs. The most effective scene must have been the last, when Hercules forced the gates of hell, which vomited forth against him tongues of flame and balls of fire.

Masquerades.—Another and better field for allegorical display was offered by masquerades, which formed a frequent part in entertainments, and in which mechanical devices and fantastically dressed persons achieved wonderful effects. Olympus, the three regions ruled by the superior gods;¹ the seasons, the divisions of the globe, the races of mankind, the elements, the Virtues and the Vices, the arts, and whatever of positive or theoretical knowledge could be represented, furnished scope for mechanical ingenuity. The allegorical figures, made of wood and other material and supplied with masks, were grouped upon wagons with concealed wheels and drawn by richly-caparisoned horses.

The Drama.—About the seventeenth century the theatre had become so far developed that it began to contribute to the popular amusement. Its origin, however, was far earlier. Even the Middle Ages had their mysteries and moralities, which presented to the pious spectators scenes from the Old and New Testaments and other devout subjects. These continued in use in the Jesuit schools long after the secular drama had developed from them and found a stage for itself outside the Church and the school. The drama was too inviting a field to be monopolized for pious uses. The secular spirit of wit and humor recognized its possibilities, and we thus find incipient comic performances in the mummeries, carnivals, and similar festivities. Moreover, even on serious occasions the drama was too full of vigorous life to be confined to abstract, dogmatic, or moral subjects; and hence we find as early as the fifteenth century secular elements even in clerical compositions, and toward the end of that century satire intermingled in what had now become more developed dramatic form.

The merit of having systematized the rude and often obscene carnival farces, and of thus having at least formally founded the German drama, belongs to Hans Sachs, though the poetical merit which has been ascribed to his dramatic works is merely a complimentary judgment of his patri-

¹ I. e. the sky, the sea, and the nether world (Hades), assigned respectively to Zeus, Poseidon, and Pluto.—ED.

otic countrymen. We shall omit the mention of his successors, because the contemporary appearance of Shakespeare not only overshadowed all workers in this line, but sets at naught all the calculations of the historian of civilization.

The first stage was a mere scaffolding of boards. The actors were amateurs, and female parts were for a long time taken by boys. The first German theatre was built by the Meistersingers of Nuremberg in 1550. It consisted of a covered stage. The spectators occupied seats in the open air, though privileged persons were seated at the sides on the stage itself.

Professional actors appear about the end of the sixteenth century and at the beginning of the seventeenth. Each royal court had its troupe. English actors, who were more proficient and advanced than their continental fellows, had already visited Germany and the Netherlands, and no doubt contributed to the more rapid growth of the stage in those countries. That in some cities the civic hall was used for dramatic performances shows the importance which the drama was attaining.

Figure 5 (*pl.* 45), from a contemporary cut, shows the appearance of the stage in 1630. The scenery is rather advanced, and on the whole much like that in the modern theatre. From this we may conclude that the theatre of Shakespeare was not so primitive as it is usually thought to have been. The excellence of the mechanical appliances half a century later (as we have seen in the case of the pyrotechnic displays) makes it probable that they had passed beyond the rudimentary state at the date of which we speak. It will be seen from our cut that the drama already reflected that taste for allegory which was for so long a disease of German literature, but which we must admit was an important factor in the development of the German character. The clouds were peopled with mythological deities and Christian angels, who were supposed to assist or to thwart the two suitors of the heroine on the stage. In the beginning these supernatural accessories were merely painted, but afterward automatic figures were used.

In the foreground are seen at the same time the necessary counterpoises to the more serious æsthetic abstractions, the representatives of humor, Clown and Pantaloon, whose antics and extempore jokes had no connection with the play itself, but were intended to relieve its sombreness and to amuse the populace. However, the astronomical figures on their costumes seem to show that in this case they had some connection with the pieces. It belongs to the history of literature to unfold the growth of the German drama from clownish antics and stilted allegories to gallant pastoral plays, and from "blood-and-thunder" tragedies to imitations of the French classic drama, and thence to majestic operas and spectacular dramas, until finally its productions won a high place in the domain of poetry; but its growth was rooted in the culture of the nation and at the same time produced important reflex effects.

Rural Entertainments.—An example of the festivities of the lower

classes, especially those of the rural population, is represented on Plate 46 (*fig. 1*), from a wood-cut by Hans Sebald Beham. This class of the community, notwithstanding its unhappy condition, celebrated many joyous festivities. The figure on our Plate illustrates the consecration of a village church. Besides the various domestic events, which were celebrated according to the financial condition of the individual, the special event of the village was the festival of its patron saint. This occasion gave opportunity, in addition to its proper ritual, for all kinds of secular amusements. As is evident from the picture, marriage ceremonies were at times coupled with the other services. In accordance with prevailing custom, the ceremony was performed publicly outside the church in the presence of the guests and a small company of musicians.

The booths show that a fair was associated with the festival. Drinking and gaming were the chief amusements, and were often carried to excess. Other sports are depicted: a horse-race, a race by girls for prizes, wrestling by boys, and bowling by the elders. The sport became very violent, and often resulted in an actual fight—a source of considerable danger, for in those days every one wore weapons. The peasant dance in the right foreground exhibits the same movements, only more awkward, to which we have referred in the court balls. In the right centre is seen a peculiar game which consisted of couples hopping backward and forward on a number of logs without touching the ground. Rural festivities, as seems evident from the illustrations, always took place in the open air, for the village houses were too small to accommodate many guests, and tavern life, in its later sense, was not known outside the cities.

City Amusements.—The festivities and amusements in the cities were exceedingly various, on account of the different classes of citizens. Those of the wealthy and aristocratic imitated, and sometimes surpassed, the amusements of country nobles and princes, while, on the other hand, the sports of the lower classes resembled those of the peasants. The young patricians held friendly jousts on the market-places, and the populace parodied them by using wooden horses drawn by ropes. Marriages and torchlight dances were celebrated in the city halls. Ball-alleys had been built at an earlier date, as well as special buildings for boxing and fencing. These buildings were used for various kinds of exhibitions, as of acrobats, equestrians, actors, menageries, etc. Such amusements had already been converted into professions since the end of the sixteenth century. Baths were the representatives of the modern coffee-houses.

Concerts were given by the Meistersingers, and in winter long processions of fantastically decorated sleighs with merry bells enlivened the streets. Shooting-societies were organized as early as the fifteenth century, and prize contests often took place under the direction of the magistrates between the societies of neighboring towns. In consideration of the importance of dexterity in the use of arms for the defence of the cities, official exercises therein, not confined to small-arms, were established.

The prizes for the winners consisted of gold medals specially minted for the occasion. Figure 3 (*pl.* 46) shows such a drill.

Public Feasts.—Feasts and banquets were indulged in by all classes that could afford them. The halls of the guilds rivalled those of the nobles in the splendor of such feasts, at which intellectual entertainment was coupled with the gratification of the palate. As the good masters and grave senators had not yet begun to cultivate oratory, a class of speech-makers existed whose duty it was to respond to the toasts and occasionally to gratify the ears of the guests by the recitation of poetry, which was applauded in proportion to the limited requirements of the occasion. These officials carried a baton with which they rapped on the table to command attention; they wore medallions, usually of carved and painted wood, though sometimes of silver, which were fastened upon them as testimonials of proficiency in their art. Figure 4 is the portrait of one of them, a certain Michael Weber, who was one of the best known characters of Nuremberg during the second half of the seventeenth century. Sometimes poets-laureate were found among these speech-makers.

Besides general feasts, most cities had special ones, as the "shepherds' dance" of Munich and the masquerade procession of Nuremberg, etc. The latter feast is said to have been granted by the emperor Charles IV. to the butchers' guild of Nuremberg as a reward for its not having taken part in a certain great trades' rebellion. Annually on the appointed days they paraded the streets masked, clad in uniform and striking costumes, and conducted by captains who generally belonged to the upper classes. The procession was headed by grotesque figures, such as the *Kindleinfressers*, "child-eaters," a huge cannon from which old women were fired, a ship filled with devils and fools, etc. This sport died out about the middle of the sixteenth century, but it was considered of sufficient importance to be fully described, and the names of the captains, illustrations of the costumes, etc. were preserved in manuscripts, many of which are extant in Nuremberg. Figure 2 is copied from one of them.

National Development.—We have seen how in the course of their development the German people preserved and manifested their original disposition in their ways of feeling, thinking, and acting, in the utterance of their joys and sorrows, in their relations toward science and arts, trade, commerce, and agriculture, in the character of their religious wants, and in the expression of their poetic qualities. But civilization tends to overcome one-sided individuality and to advance toward pure universal humanity. Accordingly, it happened very early that social circles were formed, which, standing upon the highest point attainable, imagined themselves in possession of a bond that was to unite all nations in a common brotherhood. Such circles sprung up in Germany as well as elsewhere, and, aided, of course, by foreign developments, adopted the prevailing social tone, which, though forced to yield to that of the succeeding age, was for the time absolutely dominant. The development of a nation must, in fact, tend in the direction thus indicated; so far as it

departs therefrom it falls away from true progress. An exclusively national civilization only marks the point where a people has stopped in its march toward universal culture.

National Costumes.—It is from this point of view that such peculiarities as "national costumes" are to be explained. They belong in whole or in part to older, unprogressive styles, and, apart from influences of climate, contact with other races, and similar circumstances, they exhibit no special, independent development in individual countries or provinces. The connection of cause and effect cannot always be determined, but wherever national peculiarities of costume have been preserved, enough indications exist to demonstrate the truth of our opinion that national costumes are the result, not of development, but of cessation of development.

Figures 1 to 19 (*pl.* 47) present a number of such restored costumes. The rustic population was, as a general thing, unwilling to adopt long pantaloons, because the French Revolution, which was so offensive to their conservative and even aristocratic ideas, had introduced them. Consequently, in many districts short knee-breeches were retained, as by the peasant of the Black Forest (*fig.* 1); by the Tyrolese (*fig.* 4), who, being compelled to climb mountains, wore them not quite as low as the knees; by the Norwegian peasant (*fig.* 7); and by the Jutland fisherman (*fig.* 8).

The foot-covering of the Finnish country-girl (*fig.* 9) is none other than the early mediæval foot-gear (*pl.* 34, *fig.* 12). The ankle and foot are wrapped about with cloth, covered at the foot with roughly-cut leather, and fastened with straps. A similar foot-covering is worn by the Slovaks and the Italian mountaineers; but the Spaniard (*pl.* 47, *fig.* 15) wears the same as the shepherd of the Roman Campagna, to whom he is probably ethnologically related. The only difference is that the Spanish peasant wears lighter wrappings, and over them a very ancient style of sandal, while the Roman, being much on horseback, has leather leggings. The Corfu woman (*fig.* 17) wears the ancient sandal, not on her bare feet like the women of old Greece, but over stockings; the rest of her costume shows Byzantine elements, except the head-kerchief, which marks her Slavic descent. A like kerchief is notable on the Slavic woman (*fig.* 12) of Hungarian Hradisch and the Hanak woman (*fig.* 13) of Olmütz in Moravia, but otherwise the costumes of both show peculiarities whose historical origin is easily traceable. The one wears the well-known frill of the sixteenth century, which is also worn by the Slavic woman of Lusatia; the other has the fur coat slit at the back, its laps turned and buttoned at the waist—a style which we find again in the army of Frederick the Great.

The large cap of the peasant-woman of the Black Forest (*fig.* 2) is one of the many outgrowths of the *fontange* heretofore mentioned (*p.* 251). The Tyrolese woman (*fig.* 3) wears the fur cap of the seventeenth century (*pl.* 38, *fig.* 14). Even the Saxon girl's peculiar cylinder-shaped hat (*pl.* 47, *fig.* 5), here derived from Bistritz in Transylvania, is only

the velvet-covered pasteboard frame adorned with spangles and artificial flowers which was worn in Germany in the same century on festive occasions. In the case before us its only ornament consists of ribbons hanging down behind. For the rest, this figure wears the fur coat adopted from her Wallachian neighbors, and men's boots, rendered necessary by the bad roads of her country. The Dutch woman (*pl.* 47, *fig.* 6) wears the fichu of the French Revolution (*pl.* 38, *fig.* 24), but the gold clasps which hold the fine linen cap on her head are of Burgundian origin.

In the Russian gala costume (*pl.* 47, *fig.* 11) we readily recognize the ancient Russian garb of Figure 8 (*pl.* 34). To account for the older Turkish costume (*pl.* 47, *fig.* 18), which, however, is now gradually going out of use, we should have to go back far into the history of Oriental development, perhaps as far as the age of the Sassanides. The costume of the Scotch Highlanders (*fig.* 10) clearly contains very ancient elements, but, as little is known of the early culture of this people, it would be difficult to trace its precise origin. The same is the case with the costume of the Spanish woman (*fig.* 16), the cut of whose dress is indeed modern: its bright colors recall the garb of the Roman peasant-women, but they also remind one of the like feature of the costumes found in Egyptian paintings. Examples of how modern costumes are adapted to the conditions of a country are shown in the Hungarian peasant (*fig.* 14) with his linen sack pantaloons, and in the Mexican (*fig.* 19) with his broad-brimmed straw hat, short jacket, and excessively long pantaloons, which are suited for riding over hot plains.

National Manners and Customs.—What has been said of national costumes holds good for particular habits and usages. They are but relics of former practices, virtuous or vicious. Plate 47 gives a number of more or less well known examples. In the sword-dance of the Ditmarshes (*fig.* 20) we recognize beyond doubt the popular sport of the ancient Teutons, which Tacitus describes. The horse-races of England (*fig.* 21) are clearly of ancient origin, though chiefly developed in later times.

The Roman Carnival (*fig.* 22), like other such festivities, appears as a natural reaction against the severity of Lent, previous to which life for the nonce was given to a season of unrestrained enjoyment. The custom of masquerading originated from an ancient Italian usage which enabled people of rank to frequent places of amusement without being recognized. When the celebrations of the Carnival once passed into the streets—as indeed the tendency of Southern life is naturally out of doors—the use of masks may have received for the above-mentioned reason an additional impulse. The desire which such disguises gratified of appearing a greater personage than one really was influenced others to their adoption. It was soon perceived, too, that greater freedom of action was possible under such concealments: for all these reasons the custom became firmly established, and in time passed to other countries. The “Passion Play” of Oberammergau (*fig.* 23) is a direct continuation of the mediæval mysteries, and up to a late period it had the same purpose in view—namely, to produce

an edifying effect by the dramatic representation of the Passion of Christ. Latterly the universal spirit of speculation seems to have taken possession of this institution and to have robbed it of its purer significance.

The Spanish bull-fights (*pl.* 47, *fig.* 24) owe their origin, no doubt, to the ancient Roman combats with wild beasts, although no unbroken historical connection can be shown. They can, however, be traced back to the age of the Moorish dominion, after which period no great festival, and especially no royal celebration, was without its bull-fight. Formerly, they were considered an honorable combat, and princes and knights engaged in them, but now only professional fighters conduct them for the amusement of the populace. More than anything else these exhibitions reveal the barbarous element which underlies Spanish life.

The last illustration of our Plate (*fig.* 25) shows a Russian coasting-scene, which is sufficiently accounted for by the climate of the country and needs no historical elucidation; this sport is now Americanized in the toboggan slide.

Apart from the historic standpoint, the consideration of national customs in general falls largely within the province of Ethnology, and those of a more modern origin have become so widespread that any further description by us is unnecessary.

8. COURT AND STATE CEREMONIES.

Court celebrations, such as coronations, triumphal processions, acts of homage and investiture, funerals, etc., assumed in time a uniform character with a fixed ceremonial in the different European countries, as had long been the case with the festivals of the Church. Upon all these occasions a degree of pomp was displayed which in each succeeding age constantly increased in magnificence, until the French Revolution, by its rudely-contrasted exhibitions, led to more just ideas of royal dignity and a better taste. Italy at first, and afterward Spain and France, were the models in matters of this kind, and, as all the other courts proved apt pupils, we find a pretty uniform ceremonial at Madrid and Stockholm, at Paris and Vienna, and so too at Warsaw and Moscow as these cities came under the influence of European civilization.

Royal Processions.—Figures 1 and 2 (*pl.* 48) give an idea of the elaborate arrangements of the royal processions: the former represents the entry of the elector and the emperor Charles VII. into Munich; the latter is the funeral of the countess palatine Hedwig, who died in Nuremberg in 1657 and was there interred in the church of the Saviour. The original picture of Figure 1 represents eleven coaches, each drawn by six horses, three sedan-chairs, and more than one hundred and thirty mounted men, besides an innumerable caravan of pedestrians, for the most part clad in gala costumes. The coffin of the countess was followed by more than three hundred and fifty mourners. The procession was arranged as follows. Two halberdiers awaited the train in front of the church-door; four others, with reversed lances, preceded it. Next followed three mar-

shals, with their suites, selected from the patrician class of the city. The cross was borne by the pupils of the two principal schools, accompanied by their teachers. Next in order came the clergy in full vestments, an additional marshal leading the officials, servants, and other dependants of the deceased, while a chief marshal, followed by three subordinate ones, immediately preceded the hearse.

The hearse was drawn by four horses draped in black (*pl.* 48, *fig.* 2). The coffin was enveloped in a black pall, partially covered with a white cloth ornamented with the family arms. Sixteen noblemen supported the pall, while an equal number of torch-bearers surrounded the hearse. Three marshals, who may be recognized by their staves in our illustration, and two torch-bearers, followed it. Then came the principal mourners, the reigning elector, Christian August, ambassadors of royal personages, and representatives of the city of Nuremberg. The *cortège* was completed by the female relatives of the deceased with their suites, and finally the general public.

Similarly imposing were the ceremonies at the reception of foreign embassies, of royal suitors, and at royal marriages. Most pompous of all were the demonstrations at the return of the emperor from his coronation or when he visited a city to receive its homage.

Coronations.—The coronation of a German emperor retained many peculiar customs and consisted of two entirely distinct events: the coronation proper, and the court and public festivities which accompanied it. The rite of coronation, a ceremony continued through so many centuries, underwent a certain degree of change in the course of time, but the essential features were as follows. The place of coronation was at first Rome, afterward Aix-la-Chapelle, and finally Frankfort-on-the-Main. When the newly-elected emperor made his appearance in the city intended for the ceremony, the three electors spiritual, the archbishops of Mayence, Treves, and Cologne, proceeded with their clergy to the cathedral. While Rome was the place of coronation the act was performed by the pope in person. The emperor elect, magnificently costumed and accompanied by a brilliant suite, proceeded to the cathedral to meet the dignitaries there assembled. The archbishop of Cologne, after swinging the censer, presented to him the crucifix and the book containing the Gospels to be kissed. Having been led to the altar, he knelt upon a cloth of gold while the archbishop recited the ritual. He was then conducted by the other two archbishops to a golden chair, where he remained during the celebration of the mass. Choral music accompanied the service, and while the monarch, together with the entire crowd of attendant divines, again knelt before the altar, the litany of the saints was chanted. Thereupon the archbishop of Cologne, upon whom the act of crowning devolved, addressed certain stated questions in Latin to the assembled princes. They all in reply thrice declared that they would recognize the emperor-elect as their sovereign. An abbot then addressed the same questions in German to the people. Again the emperor knelt at the altar,

where the celebrant archbishop, laying aside his gloves and ring, after invoking a blessing, anointed him with oil.

The monarch then retired, in company with the archbishops of Mayence and Treves, to the sacristy, where the anointed spots were wiped dry by chaplains, and where he laid aside the costly costumes (which became the perquisite of the church in which the ceremony was held) and donned the festive robes proper for the occasion, which we shall subsequently describe. Returning to the altar, he received from the celebrant a naked sword, which was then returned to its sheath and buckled about him. The ring was put upon his finger, the gloves were drawn on, the sceptre and globe were handed to him, while a special prayer was offered; and then, at length, the imperial mantle was placed upon him. Finally, while the prescribed prayers were recited, the three archbishops, taking the crown, performed the main act of the ceremony. The emperor then advanced to the altar and took the oath on the book containing the Gospels.

When the coronation took place at Aix-la-Chapelle the emperor was at this stage of the proceedings conducted by the archbishops to the gallery of the octagonal tower of the cathedral, where he seated himself in the marble chair of Charlemagne. He was then saluted as sovereign of the empire, first by the elector of Mayence, and then by the provost and canons of the cathedral, who admitted him to membership in their body, whereupon he took their special oath. During the singing of the *Te Deum* he conferred knighthood upon those he had chosen for that honor.

All returned to the altar, where the mass was continued, and after several hymns the emperor handed his sword to the marshal of the empire and his globe to the count palatine of the Rhine. Retaining the sceptre, he approached the altar and laid upon it a piece of money, being followed by the electors and canons, who did the same. After several intervening ceremonies the emperor finally partook of the communion. Afterward, seated upon the altar platform, he again conferred knighthood upon deserving individuals.

After the three electors spiritual had exchanged their pontifical robes for the secular purple, the entire company proceeded, by way of a specially built gallery constructed of wood and covered with cloths, to the city hall, where the coronation banquet was prepared. The ceremony, as above described, was very tedious, and, as in accordance with the ritual of the Catholic Church the monarch had to accomplish it fasting, it can readily be understood why the last German emperor of the house of Austria fainted under the weight of his gold- and jewel-decked robes on the occasion of his coronation.

The emperor made his first appearance among the people in great pomp (*pl.* 48, *fig.* 3). The elector of Treves headed the procession, those of Cologne and Mayence accompanied the emperor, and the electors of the Palatinate, Saxony, and Brandenburg immediately followed him, while behind them came another escort, as every elector surrounded him-

self with a pomp befitting the occasion. The military guard was formed by the various guilds of marksmen. Money was thrown among the people, the public fountains ran wine instead of water, and the popular feast culminated in the roasting and eating of an entire ox stuffed with game (*pl.* 48, *fig.* 4).

Other coronation ceremonies differed little from the one just described, although they were somewhat less ostentatious. This was especially true of the coronation of queens, which concerned the ruling house rather than the entire country. We give in Figure 5 a view of the coronation of the empress Eleanor at Ratisbon in 1630 in presence of the entire electoral college.

The coronation of the Polish kings was, on the whole, like that of the German emperor, though the Polish college long resembled, except in the costume of its members, the mediæval electoral assembly of Germany. The principal event, celebrated in the open field near the village of Wola, not far from Warsaw, is represented in Figure 6, which is copied from a large copper-plate engraving of the eighteenth century: a certain wildness in the surroundings indicates vividly the real character of the proceedings.

9. ROYAL INSIGNIA.

Plate 49, copied from the exhaustive work of Fr. Bock, represents a German emperor in full costume (*fig.* 1), the several parts of the coronation robes, and several crowns belonging to different kingdoms.

Imperial Robes.—The ancient ritual of the coronation ceremony designated several pauses in the church services, in which the emperor was clad with silk stockings and shoes, a shoulder-cloth or *humerales*, and beneath this a long dark tunic, *tunica talaris*; this was covered by a light-colored garment, the *alba*, which, although very long, was drawn up far enough to expose the tunic below, and over this the massive *stole* of considerable width and fully eighteen feet long, which, by reason of its great length, required skilful draping.

The remaining articles of the imperial robe, as we have seen (*p.* 306), were placed upon the monarch at the altar. Of these the most important and imposing was the mantle (*fig.* 11). It consists of red taffeta, and is of Moorish manufacture, having been made in Sicily, though not originally for this purpose. It shows in the centre a palm tree, and on each side a lion overpowering a camel. The Arabic inscription along the border states that it was made at Palermo in 1133. It was probably brought to Germany, as part of her inheritance, by Queen Constance, spouse of the emperor Henry VI., and was added to the imperial state wardrobe during the reign of Frederick II., who had lost all the older imperial insignia and treasures in the defeat at Vittoria. The richly-jewelled shoes (*fig.* 7), the stockings, and the gloves (*fig.* 6) are also of Saracen workmanship, but the eagle worked in the palm of the gloves indicates that they were made for Germany.

The so-called "eagle dalmatic" (*pl.* 49, *fig.* 10) is included among the imperial robes, though it does not really belong to the coronation costume. It is a magnificent garment, probably worn by the emperors in their passage from the palace to the church. The true dalmatic is shown in Figure 12, and is a noticeable specimen of mediæval embroidery. It was worn by the emperor when he sang the Gospel during the coronation ceremony at Rome, where this garment is still preserved in St. Peter's. Originally, the imperial title was conferred only by the coronation at Rome, but, though the ceremonial was afterward transferred to other cities, the title was retained.

The Crown too (*fig.* 2), which was long supposed to have belonged to the age of Charlemagne, is itself more probably a piece of Italian work, dating from the end of the eleventh or the beginning of the twelfth century. An inscription on the circle ascribes it to the emperor Conrad, probably the third of that name. The flat gold tablets which constitute the head-band contain alternately figures in enamel, and are set with pearls and large uncut precious stones.

We also present an illustration of the famous "iron crown" (*fig.* 4), a name, however, which does not occur earlier than the thirteenth century. It is supposed to be of Greek workmanship from the times of the Carolingians. It takes its name from an iron ring which was made, it is said, of a nail from the cross of Christ, and which holds the gold plates together. However, it is doubtful whether it was ever used as a crown. The Hungarian crown (*fig.* 3) consists of two distinct parts. The broad plate extending over the head probably belonged to the crown which Pope Sylvester II. gave to St. Stephen in the year 1000, but the circle with its pointed crests and enamellings, which give information as to its history, was a present from the Byzantine emperor Michael to Gejza of Hungary, who became king in the year 1074. The Bohemian crown (*fig.* 5) is an ordinary piece of gold-work of the time of Charles IV.

The Sword of Ceremony (*fig.* 8), which was used in conferring knight-hood, has probably the same origin and date as the gloves, etc. The sheath is ornamented with enamelled squares, which are set with precious stones and edged with filigree-work. The knob of the handle was renewed by the emperor Charles IV. The sheath of the second sword (*fig.* 9), which is called the sword of St. Mauritius, is ornamented with royal figures in relief set in enamel. A third sword, which is preserved in the cathedral at Aix-la-Chapelle apart from the other treasures, belonged to Charlemagne, and was presented to him by the caliph Haroun al Raschid.

The Book of the Gospels which was used in the coronation service is also preserved at Aix-la-Chapelle. It dates from Carolingian times, and was, according to tradition, taken from the tomb of the great emperor, but its present binding belongs to the fifteenth century.

Relics.—Among other articles, the description of which would lead us too far, and which in part have been lost, are several relics that belonged

to the German imperial treasures, especially a spear-point containing a nail from the cross of Christ, etc. After divers vicissitudes the entire treasures found a resting-place at Nuremberg, where up to the year 1523 they were annually exhibited at Easter-tide. When they were required for use they were carried by an embassy of the senate to the place of coronation. During the French wars in the beginning of this century they were first taken to Ratisbon, and thence to Vienna, where they are still preserved in the imperial treasury.

The insignia of royalty lead us from the subjective review of the development of culture to a consideration of its forms and constitution, the Church and the State. These institutions, though themselves determined by that development, and again reacting upon it, were at the same time more an outgrowth of extraneous circumstances, or in fortunate cases of theoretically established principles, and they thus represent the formal side of civilization rather than its essential elements. We have first, however, to devote attention to a factor common to both aspects of social development—one which, scientifically investigated, is found to be of far more consequence than would at first appear.

10. ARMORIAL BEARINGS AND COATS OF ARMS.

Our Plates 50 and 51 are devoted to this subject. If these symbols had no other purpose than to designate the ruling class or to distinguish its members, we might indeed omit their consideration in this History of Culture; but upon a closer scrutiny of the subject it will be evident that they are at once of very early origin and of far-reaching importance.

Human civilization began when the individual enclosed a portion of the wild and ownerless land as a home for himself and his offspring, and the foundation of social order was laid when he designated in some recognizable manner his property as belonging to himself. Such designation could be attained in ages when writing was unknown only by the use of certain marks, which became known and respected in the neighborhood. (See Vol. I. pp. 135, 136.)

Origin of Coats of Arms.—As in early times live-stock constituted almost the sole property, the owner's mark was made in a manner repugnant to humane feelings, though it is one that has not yet gone out of use. It was cut or burned into the hide of the animals, and consisted generally of some simple figure formed by a few straight lines (*fig.* 58). In the course of a few generations it became recognized as the distinctive house-mark, and, as there were then no family names, it served in proceedings of adjustment to represent the family or individual by whom it had been adopted.

In Germany family names did not originate till late in the Middle Ages, when the nobility began to be called by the names of their districts or seats, though the citizens and peasants did not adopt names until the fourteenth and fifteenth centuries. In some districts, as in East Friesland, such names were not used until the beginning of the present century.

In course of time family marks became more complicated (*pl.* 50, *fig.* 59) new forms having constantly to be invented, and the initial of the family name was often associated with them. In this form they were used as stamps, seals, etc. after family names had long become obligatory. They did not disappear until the art of writing had become more universally extended. The marks used by stone-masons are merely adaptations of the family marks, and so too are coats of arms. It was natural to paint the marks upon the shields, so as to facilitate recognition at a distance, especially when close armor was worn. That coats of arms had no other purpose than this throughout the Middle Ages is evident from the fact that the emperors and princes often conferred them upon citizen-families without thereby bestowing increased rank. The special significance which they had for the nobility was an accidental outgrowth of the exclusive right of taking part in tournaments and of the other social privileges of that class.

Heraldry.—After armorial bearings had long been in use they became the objects of a theoretical study which gave rise to an art—namely, that of heraldry. We do not pretend to explain fully even the elements of this art, but a few observations may serve to make it intelligible. The coat of arms was intended to represent the shield-bearing, armor-clad knight, and hence consisted of the shield with its appropriate mark or picture, and the helmet with its trappings. There was a time when shields were gayly colored, and even marked with symbols, such as the figure of a lion or an eagle, but they did not constitute armorial bearings, being intended to designate the character of the knight rather than to represent his person. The symbols and the colors passed to the armorial bearings, though they were not necessarily included in them. No authentic coats of arms can be found earlier than the twelfth century.

Tinctures and Furs.—Pure colors alone were permitted for heraldic tinctures (*figs.* 1–7); even green and purple occur but rarely, and silver and gold simply take the place of white and yellow. Furs, with which shields were often covered, also assumed the signification of heraldic tinctures. Where it was inconvenient, as in drawings or engravings, to color the arms, the tinctures were represented by lines and marks. Thus, silver (*fig.* 1) was designated by the absence of lines—that is, by a blank; gold (*fig.* 2) by dots; furs by special marks, as in Figures 8 and 9, a combination of light and dark furs being designated by the so-called “clouds” and “iron hats” (*figs.* 10, 11), derived from the arrangement of furs on the borders or linings of cloaks, etc.

The earliest markings of arms are the so-called “places of honor” (*honorable ordinaries*).¹ Like the early house-marks, they are generally figures of variously combined straight lines.

The Escutcheon, or field, was divided into various colors by lines or bands which have different directions and patterns, and are technically

¹ These represent the clamps or fastenings of the shield, which were converted into ornaments by painting or gilding.—ED.

called *partition-lines*: halved (*figs. 12, 13, pl. 50*), quartered (*fig. 14*), divided into several spaces (*paly, fig. 15; Barry, fig. 16*), diverging from a single point (*pile, fig. 17*), divided into rhomboids or lozenges (*lozengy, fig. 18*), by broken lines (*fig. 19*), by curved lines (*fig. 20*), or checkered (*fig. 21*). Sometimes the upper part of the shield is divided off by a horizontal line, and it is then called the *chief* (*fig. 21*). Often the entire border of the field was left free (*fig. 22*). Uneven divisions of the field produced the *pale* (*fig. 23*), the cross-bar or *fess* (*fig. 24*), the slanting bar or *bend* (*fig. 25*), the *chevron* (*fig. 26*), the cross (*fig. 27*). These different arrangements are sometimes repeated (*pallets, fig. 29*), or occupy only a part of the field (*gules-quartering, fig. 30*), which may again be treated as the original field (*fess-checky, as in fig. 33*). Sometimes the partition-lines are wavy (*bend-wavy, fig. 28*), curved (*fig. 31*), or crenellated (*bend-embattled, fig. 32*), etc.

The Devices—or, as they are technically called, *charges*—on the shield do not in the earliest examples have an heraldic significance. The shield in Figure 60 dates from the thirteenth century, but it is doubtful if the device upon it is anything else than ornamental. The charges are extremely diverse, a natural result of their immense number. Many have undergone changes in the course of centuries—have become unrecognizable and difficult to determine. Widely-extended families made slight changes in the armorial bearings in order to distinguish the different branches from one another and from the main stem—a practice which in later times was not permitted unless approved by the sovereign. Sometimes unrelated families have the same charge with different colors, and occasionally the entire escutcheon is the same, the distinction lying in the ornaments of the helmet alone.

The armed knight wore over his helmet a floating veil (lambrequin) to protect it from the hot rays of the sun; this veil was of the same color as the shield. He also wore, at least on special occasions, a decoration upon his helmet, gayly colored in accordance with the simple taste of his age, and affording an opportunity for reproducing his coat of arms. As in course of time symbolism took the place of reality, the veils above spoken of were treated as objects of ornamentation, and many a decoration was invented which could never actually have been worn upon the head. Sovereigns placed their crowns upon their coats of arms—a custom soon adopted by the nobility in connection with the helmet; sometimes such combinations gave rise to the most incongruous forms.

Arms of States.—States and cities also adopted arms or were accorded them by the sovereign. Their coats of arms, however, were naturally devoid of the helmet and its decorations, such as the knights actually wore, as localities could scarcely be conceived of as being mounted on steeds. Our Plate contains the arms of the states of the old German Confederation. They were for the most part the coats of arms of the reigning houses: Lippe-Detmold (*fig. 34*), Schaumburg-Lippe (*fig. 35*), Anhalt (*fig. 36*), Oldenburg (*fig. 37*), Brunswick (*fig. 38*), Hanover (*fig. 39*),

Prussia (*fig. 40*), the two Hesses (*fig. 41*), the two Mecklenburgs (*fig. 42*), Holstein (*fig. 43*), Waldeck (*fig. 44*), the principalities of Reuss (*fig. 45*), the principalities of Schwarzburg (*fig. 46*), Nassau (*fig. 47*), the kingdom and duchies of Saxony (*fig. 48*), Bavaria (*fig. 49*), Würtemberg (*fig. 50*), Baden (*fig. 51*), Austria, the family arms being supported by the imperial eagle (*fig. 52*), Liechtenstein (*fig. 53*), and the free cities of Lübeck, Hamburg, Bremen, and Frankfort (*figs. 54-57*). Figures 61-65 represent coats of arms of the fourteenth, fifteenth, sixteenth, and eighteenth centuries. That of the fourteenth century is simple and natural; the two of the next century are pure and within due bounds; the one of the sixteenth century is overladen with ornament, and has not the true shape of the shield; while the last one is entirely erroneous and full of flourishes.

Plate 51 represents the arms of the principal nations of the world.¹

II. ADMINISTRATION OF JUSTICE.

In Europe, as in Asia, from the beginning of the Middle Ages, as in the ancient world, the various political institutions have had a history rather than a development. Civilization has frequently rather endured than developed them. We may take it for granted that these institutions, so far as they relate to our domain, are sufficiently well known from the study of political history. It only remains for us to take a more critical review of the subject of the administration of justice.

From what has been already said, it will readily be perceived that right and possession were synonymous. He alone had rights who could maintain them. Among the pagan Germans only the freeman—that is, the possessor of the land—had full rights; the serfs were limited to a few; the slave had none at all. The latter, being generally a war-captive, was a mere chattel, and might be sold or even slain at the will of his master.

Judicature.—Justice was administered only on complaint; an accused person could establish his innocence by an oath. This alone, however, was not sufficient; a number of reputable men belonging to a community, and who in that case were called “oath-helpers,” had likewise to testify to his innocence. In more serious cases the duel or some other form of ordeal was resorted to. Conviction followed only when the criminal had been caught in the act or if the general community condemned him.

Freemen alone could act as accusers, witnesses, or judges. Trials were held publicly on a definite spot called the *Malplatz*, usually situated near some sacred tree or spring. Capital punishment could be inflicted on freemen only for treason or some other crime against the public welfare. Murder was compensated by the payment of *weregild* to the family of the deceased; other crimes by ransom-money to the injured party. The penalties or fines were in general severe, and especially was the honor of the female sex strenuously protected. Among the Franks disrespectful conduct toward a woman was punished by a fine of fifteen shillings or as

¹ This plate is copied, by permission of the publishers, from the excellent work, *Staatswappen aller Länder der Erde*, Boselli, Frankfort-on-the-Main.

many cows. It was optional with the offended party to appeal to the law or to obtain satisfaction privately. He might also declare a feud against the one who wronged him and seek blood-revenge (see Index, Vol. I.), though not for offences against property.

As social conditions became more complicated, the old forms of law were found insufficient. In fact, principles had not been formulated, although such were contained in the few existing maxims of law. The aim had been to attach a definite punishment to each possible case of crime; and when new cases occurred they were decided by analogy with similar cases. But this process was accompanied by great inequality in the further development of law. Charlemagne attempted to give relief by means of his Capitularies, and his successors followed in his steps. But the civil law gradually assumed the forms of the Roman code, both because of the contemporaneous development of the canon law by the side of the former, and of the rigid enforcement of the newly-arisen feudal law. The criminal law withstood Roman influence much longer than the civil code, because the old German sense of personality, the feeling of each man's individuality, did not accord with the Roman ideas. Hence, long after the advantages of the Roman methods had been recognized in the settlement of cases concerning property, crimes concerning the person were dealt with publicly and orally according to ancient modes of procedure.

The emperor was supreme judge, and he was represented by the vested proprietary or by designated judges, who were aided by a number of sheriffs. Spiritual as well as secular princes were invested with the right of penal judicature. The cities were the seats of imperial judges, who selected their sheriffs from the most prominent families. In course of time, as the cities acquired the right of administering justice, these sheriffs or judges constituted a patriciate, which must not be confounded, as is sometimes done, with the old urban nobility.

Refusal to obey the summons of a court entailed outlawry. The oath of the accused was still received, but it gradually lost its primitive value, and came to be regarded simply as that of a witness. The importance of the ordeal increased with the growing influence of the Church. This remark, however, does not apply to the duel, which was classed among the ordeals, and which, derived from pagan times, still survives. The abuse and fallacy of such methods of judgment were recognized at an early period, but the numerous trials for witchcraft, which reached their culmination as late as the sixteenth and seventeenth centuries, show how slowly reason makes its way.

Ordeals.—Among the most usual ordeals was that of water, based upon the notion that this pure element would cast out a guilty person. If the suspected person did not sink in it, he was adjudged guilty; if he sank, his innocence was established.¹ In the ordeal by fire the accused

¹ A rope was attached to the person undergoing the ordeal, so that if he sank he could be saved from drowning. This precaution is strongly insisted upon in the directions given on the subject by Archbishop Hincmar in the ninth century.—ED.

established his innocence by touching white-hot iron. In the bier ordeal the suspected person was required to make an oath and to touch the body of the murdered man, which it was thought would bleed if the accused were guilty.

Torture was inflicted at an early period on suspected persons, and its use increased as the old mode of trial fell into desuetude and legal investigations became inquisitorial. In the latter process punishment could follow only upon a confession of crime; but it is well known from the witchcraft cases that innocent persons subjected to the pain of torture confessed crimes of which they were not guilty. The methods of torture were manifold, the lighter grades being inflicted by means of rods, whips, thumbscrews, and the so-called "Spanish boot." In more severe methods the body was racked by being suspended by the hands while heavy stones were attached to the feet (*pl. 52, fig. 4*), or, again, the flesh was pinched with red-hot tongs or seared with melted pitch. Figure 3 shows the pan used for melting the pitch, which, with other implements of torture and punishment, is preserved in the museum of Nuremberg. Sometimes the body of the victim stretched upon the rack was further mutilated by a roller armed with spikes, the so-called *gespickter Hase* or "larded hare" (*fig. 6*), which was drawn back and forth over the bleeding flesh. Figure 1 exhibits a torture-chamber as preserved to a recent date in a castle near Nuremberg. Figure 11 depicts an inquisition by torture as copied from a wood-cut of the sixteenth century.

Punishments were severe and, according to our ideas, extremely cruel. Minor misdemeanors were punished by *durance*, the hardship of which was increased by cuffs and irons (*fig. 5*) or by the stocks (*fig. 2*), in which the prisoner, sometimes in company with others, was fastened by hands and feet. Disturbers of the peace were placed in the pillory, the neck being inserted in the larger and the wrists in the smaller openings of an instrument called "the violin" (*Geige, fig. 9*). When two quarrelsome persons were to be punished, they were fastened to a longer instrument (*fig. 8*) and placed upon a high platform, where they might continue their abuse of each other for the entertainment of the public. Sometimes masks with a trumpet attachment to increase the sound were placed upon the offenders. The specimen shown in figure 10 bears the arms of Nuremberg, indicating its use by that city as an instrument of punishment. In the increasing scale of inflictions we soon find beheading, hanging, breaking on the wheel, drowning, and burying alive, which were intensified by previous whipping, mutilation, pinching with heated tongs, etc. Alliance with the devil, witchcraft, etc. were punished by burning, and this mode of punishment was also inflicted for heresy; in Germany, however, only in exceptional instances.

Many of the so-called "felons' books" have been preserved, containing entries in the form of a daily journal, in which the executioners kept an account of the performance of their functions, and which seem to reek with the odor of blood and the air of dungeons; and yet, notwithstanding

all this, we should not be justified in imputing to our ancestors the trait of cruelty, and it would indicate a lack of historical judgment to pronounce their penal system barbarous. Underneath the coarse husk lies a sound kernel. Society earnestly sought to rid the world of evil, believed that it had discovered in laws and punishments an efficient means to this end, and, because of this very belief, rigidly applied them. Viewed from our advanced standpoint, the trials for witchcraft seem like bloodthirsty madness. But if we place ourselves on the level of those ages, which really believed in such supernatural evil influences, our respect for the energy with which they opposed them will not be less than our pity for the error of their belief.

A feature of the mediæval penal system worthy of all appreciation is the protection which, true to the ancient Teutonic character, it threw about the virtue of woman and the helplessness of childhood. Unchastity was punished with axe and sword (*pl.* 52, *fig.* 7). In Hesse the man who committed rape was put to death by having an oaken stake driven through his heart, and the wronged woman was entitled to strike the first three blows.

The modern notion that the fear of punishment is unavailing to deter from crime is entirely refuted by history. During the fifteenth century, when the penal code as yet knew nothing of mercy, not a single case of infanticide is known to have occurred in Nuremberg; in the sixteenth, when stern justice had begun to relax through humanitarian influences, there were six cases; in the seventeenth, thirty-three; and so on until the present day, when the crime is practised almost without risk of punishment. The laxity of our laws has as little in common with true humanity as the severity of former times had with real barbarism. Punishments were really brutal only when political or religious fanaticism inflicted them. Such, for instance, was the execution of the Bohemian nobles who before the beginning of the 'Thirty Years' War rebelled in behalf of their civil and religious liberty against the house of Habsburg, but who committed the grave error of choosing the incompetent count palatine Frederick V. as their king. Their execution (*fig.* 13) resembled a veritable massacre: our picture is from a contemporary engraving which is accompanied with a description of the event and the names of all concerned in it.

As curiosities of the old penal system we mention a few punishments which entailed the loss of honor, and which were inflicted in a manner designed to excite ridicule. A woman who had beaten her husband was in some places mounted upon a donkey, facing its tail, and led through the town. Knights were punished by having their spurs broken off and by being mounted on a wooden horse. Princely culprits incurred the odd punishment of having to carry a dog—an association which was considered especially disgraceful. Hanging, which was of itself considered more dishonorable than beheading, was made more so by suspending a dog by the side of the criminal. Suicides were dishonorably buried at some cross-roads.

Vehm Courts.—In proceeding to a consideration of these celebrated tribunals our primary purpose will be to free them from the secret horrors with which writers of fiction have surrounded them. They were nothing more than the remains of the ancient imperial courts which had been preserved in Westphalia—or the “Red Land,” as it was called—while in other districts their jurisdiction had been transferred to the local constituted authorities. The fact that the Magyar and Norman invasions had not reached North-western Germany, and that the predatory feudal nobles had gained less foothold there than elsewhere, explains how it was possible for its free peasants to maintain themselves exempt from the general bondage of their class, and to preserve, among other ancient institutions, the old sheriffs’ courts.

It must indeed be admitted that the Vehm courts extended their jurisdiction and sphere of action beyond their original and normal limits. This was owing, however, less to abuses originating in the tribunals themselves than to the need of preserving order amidst the prevailing anarchy, especially during the period of the Interregnum.

The Vehm courts were held in the daytime, in the open air, and on some designated spots or *Malstätte*. The presiding officers, or *Freigrafen*, were still considered imperial functionaries, and the name *Freistuhl* meant the judgment-seat of the free sheriffs or assessors (*freie Schöffen*). When these Westphalian courts became almost the sole actual power, law-abiding men in all parts of the empire united with them and served them as *Wissende* (initiated); that is, as assistants familiar with the laws.

Gradually the element of secrecy was introduced into the Vehm as a protection to its members against the lawless classes, who naturally antagonized its work. As the power and influence of the Vehm increased, the secret tribunal dealt only with such cases as the ordinary courts were unable to regulate. Death was the sole punishment which it inflicted, and its members, lacking the usual means of carrying out the sentence, were necessarily themselves the executioners. Its manner of procedure was in exact accordance with the ancient Teutonic process as reformed by Charlemagne, and was regulated by brief and simple but definite forms. If the accused did not duly respond to the summons of the court, the sentence was made known to him, and it was carried out whenever he was captured. A willow withe and the nearest tree was the simple gallows.

The Vehm summoned even sovereigns before its courts, but with women, clericals, or Jews it did not concern itself. Eventually it degenerated into an agency of partisanship and injustice, which finally led to its abolition. Figure 12 (*pl.* 52), copied from a miniature painting preserved in Augsburg, represents a court-room of the fifteenth century.

As to the civil procedure of this early period, we shall only remark that, though often of interminable length, it always sought to establish justice; while, on the other hand, the predominance during the subsequent period of intricate formalities in the treatment of questions of equity did no little injury to the general sense of right.

12. CHURCH WORSHIP—SUPERSTITION.

In this general sketch of ecclesiastical life we shall refrain from treating of the abstract doctrines of the Church or of the development of its dogmas. But it is necessary to a just understanding of the position of the ancient Church to keep in view its fundamental theory—namely, that the salvation which the Divine Founder of our religion brought to distressed mankind required for its dispensation a special trusteeship, and that a definite organization of representatives of Christ had been appointed to administer this trust. The ministry to mankind of this treasure of salvation lay in the hands of a peculiar order, the clergy, which from its head the pope, immediately connected with the person of Christ, through its strictly-graded membership down to the lowest acolyte, held fast to and carried forward the work of the Saviour. The entire system of this administration, the hierarchy, culminated in the papacy, which thus had a double significance, corresponding to its ideal relations upward and its wholly realistic relations downward. It is with the latter only that we are here concerned.

Roman Catholic Church: The Pope.—The principle which prevailed throughout the Middle Ages, that clerics were exempt from the jurisdiction of lay tribunals and were subject only to their ecclesiastical superiors, gave to the pope in every land a compact body of subjects whose spiritual sway over the mass of the people afforded the papacy an immeasurable influence over all the relations and occurrences of life. The plenitude of power thus centred in Rome was constantly exercised. Grave or petty discords among the clergy, and quarrels between them on the one hand and with princes or people, communities or individuals, on the other, were of frequent occurrence. It was not indeed necessary that all decisions should be obtained from Rome, but it was justly felt that the final court of appeal would not only settle a disputed question definitely, but would also decide it with an impartiality scarcely to be expected of the spiritual authorities at home.

Even during the period of decline an incredible degree of activity prevailed in the Roman chancery. Thousands of documents are extant to show the industry and fidelity with which even petty affairs from all parts of the Christian world were attended to. The interests of insignificant country churches and obscure country priests received, at least formally, as much attention as the complicated disputes of sovereigns or states.

Such processes and disputes, however, were not the only channel through which the influence of Rome was exerted upon foreign affairs. Occasion was constantly found to regulate and order, in a peaceful manner, the ordinary affairs of churches, cities, and countries in every land. Reports, inquiries, and petitions flowed incessantly from all parts of the world to Rome, and were answered by papal indulgences, decisions, confirmations, pardons, and permissions. Rome was thus acquainted with

the secrets of all nations, and often did not deem it necessary to await an appeal before adjudicating a question.

On the other hand, the complaints of sovereigns and of officials, and even of the people, against the usurpations and exactions of the Roman Curia were innumerable. But never had secular authority such means of enforcing its decrees as were possessed by the Church. The threat of excommunication frightened into submission; the granting of indulgences encouraged to fidelity. The fact that the spiritual character of both these weapons of authority should have made them more efficacious than corporal punishment or material gains is an important testimony as to the character of the age.

Excommunication affected either single individuals or communities, and even entire nations; in the latter case it was called an interdict. In the interdicted land regular church services were prohibited; the altars were covered; the altar-candles were not lighted; the bells were silent. The mass was said in an undertone; the sacrament was administered only to the dying; the dead were buried without ceremony; marriages were performed in the churchyard; a general fast was prescribed; and the people were not permitted to greet one another or to have any public amusements.

An excommunicated person was considered an outcast from the Church and from society. His entrance into a consecrated place profaned it. He could not be a god-parent, a witness, or a plaintiff. His contracts were invalid. Shunned by all, his uncut hair and filthy garments were intended to make him an object of horror. We read in bulls of excommunication that any one who should speak to him or give him fire or water, or grind his flour, or prepare his food, would himself incur the same penalty. Deprived of the sacraments, the excommunicated person had no pardon to expect when dying, and after death was buried in an isolated grave.

Indulgences were not held, as has often been erroneously thought, to liberate from eternal death and damnation. They were a remission of the ecclesiastical penalties and penances, which remission might indeed continue beyond the earthly life and bridge the chasm to the final goal.

Cardinals.—Where personal mediation was requisite the pope sent legates, nuncios, or commissioners, in decreasing grade of power, to act for him. In important cases they were selected from the college of cardinals, which constituted in a certain measure the papal cabinet. The cardinals were charged with the election of the pope, but in other respects their functions were those of court officials rather than of a grade or order in the church ministry, although the title and rank of cardinal were sometimes bestowed on foreign prelates of distinguished merit.

Bishops.—Next in rank to the cardinals stood the bishops (*pl.* 53, *fig.* 2, 3, 8), to whom was confided the pastoral superintendence of specified districts, the dioceses. They were charged with the administration of church affairs and the supervision of the clergy within their respective

dioceses, which were far from always coinciding with the political divisions of a country. Their dignity was augmented beyond their ordinary powers when, assembled in council, they had a voice in defining the dogmas and general constitution of the Church. Certain offices of the sacred ministry, such as confirmation, were their exclusive function. The bishop ordained priests, consecrated churches, altars, cemeteries, etc., and appointed pastors to vacant charges or confirmed the appointments where the right to make them was vested in others. Within their dioceses they could proclaim holidays and regulate church services, and in cases of minor importance grant dispensations. To a limited extent they possessed the power of excommunicating and of granting indulgences. A principal part of a bishop's duties consisted in his spiritual jurisdiction, the administration of charitable foundations, and the protection and punishment of the secular and, to some extent, the cloistered clergy.

Archbishops.—The dignity of the archbishops ranked higher in general estimation than that of the bishops, especially as three of the former belonged to the number of imperial princes and electors. Still, the bishops were in no manner subject to the archbishops, though the latter often attempted to gain power over them. The chief privileges of the archbishops were their larger dioceses and their precedence over bishops.

Chapters.—Just as the pope had his college of cardinals, so the bishops were assisted by a body of clergy called a chapter. The head of the chapter was the cathedral provost (or dean), and the other members, generally twelve in number, were called prebendaries or canons. The office of the chapter was to elect the bishop and to advise and assist him in his administration. Originally it was the duty of the canons to perform divine service in the principal churches, but gradually they relegated the task to vicars and confined themselves to the enjoyment of their rich incomes. There was also an official who attended to the accounts, to the judicial proceedings, and to the general maintenance of the episcopal rights.

Archdeacons.—As the episcopal territory was often very large, and the number of clergy and churches was constantly increasing, the oversight of the whole became constantly more onerous; accordingly, the dioceses were divided into ten or twelve archdeaconries, with an archdeacon in charge of each. The archdeacons had to make prescribed visitations and were empowered to decide upon questions of minor importance. When their districts were large, archpriests were appointed under the archdeacons,¹ and appeals could be made from them to the latter, just as from the decision of the archdeacon to that of the bishop. The archdeaconries may be compared to the consistories of the Protestant churches, and the archpriests to the superintendents.²

The Lower Clergy consisted of pastors, chaplains, deacons (*pl.* 53,

¹ In England the title of "rural dean" is used instead of that of "archpriest."—ED.

² The consistories here referred to seem to be those of Holland. In England the consistory is the bishop's spiritual court.—ED.

fig. 6), etc. In wealthy parishes the pastors often imitated the canons and left their spiritual work to preachers and chaplains. Acolytes and similar officials were persons who served the altar as a preparation for the priesthood. Deacons were not in full orders, and performed only minor duties at the altar.

The Protestant Church vested the supreme authority in the sovereign of each country, who, however, exercised it from a secular standpoint alone. The actual administration was distributed among secular and spiritual officers, but the further determination of doctrines was based upon entirely different foundations; indeed, authority was jealously forbidden to meddle therewith. The grades and distinctions of the clergy were simplified, but not organized alike in all countries.

The Greek Church also recognized the sovereign as supreme bishop, owing to the fact that in the Byzantine empire he actually exercised some of the functions of the priesthood. The second rank in its hierarchy was occupied by the patriarchs (*pl. 53, fig. 9*), who practically governed the Church. Below the patriarchs stood the remaining clericals, who were divided in a manner similar to the Catholic clergy, but not so systematically. As there was no development of doctrine in that Church, the administration of its spiritual concerns was from the earliest times purely a matter of form, and consequently attended by numberless ceremonies.

Ecclesiastical Costumes.—In regard to the appearance of the secular clergy—of whom only we have been speaking—Plate 53 presents a view of their ecclesiastical costumes. In the priest of ancient Byzantium (*fig. 1*) we recognize the late Roman costume, from which, as we have already said (*p. 204*), the festal robes of the Catholic Church were developed. He wears a long tunic, a sack-like sleeveless upper garment (the original of the special mass-garment of the mediæval Church), and the remains of the ancient toga in the form of a narrow stripe decorated with crosses and worn in a manner similar to that of the later consuls (*pl. 29, fig. 14*).

Vestments of the Catholic Clergy.—The costumes of the Roman Catholic clergy varied widely, and still vary, according to rank, place, and occasion. We shall limit ourselves to a few remarks concerning their official vestments and ordinary house-attire, the latter of which has been subject to much change, while the former has remained more stable.

We have already in our description of the imperial coronation (*p. 307*) met with the most important of the official costumes—namely, the vestments worn during the mass. The officiating clergyman wore the *alba* (*alb*), a white linen garment reaching to the feet and gathered at the waist by a girdle (*cingulum*). The higher dignitaries wore over the *alba* two short vestments, the tunic and the dalmatic, the former being scarlet with narrow sleeves, and the latter white with wide sleeves.

The *stole*, a long, narrow, decorated scarf, was worn in several different ways: when worn by a priest celebrating the mass, it was crossed over the breast so as to resemble a cross, being retained in that position by the girdle; when administering the other sacraments or when preach-

ing, he wore it hanging down free, as in Figure 7 (*pl.* 53); by a bishop celebrating the mass it was worn in the latter manner, but under the tunic, so that only the lower ends were visible (*fig.* 3). Originally white and without ornament, stoles after a time were of various colors, were enriched with orfrays, and fringed at their ends.

The chief mass-garment was the *planeta* or chasuble (*casula*, *pl.* 56, *fig.* 3), which originally consisted of an oval garment closed all round and provided with an aperture for the head of the wearer to pass through, the chasuble covering the arms as well as the body; but later it was cut out at the sides (*fig.* 4), so as to permit a freer use of the arms. It was always made of costly material, and generally elaborately adorned with embroideries, and decorated with a cross on the back, which was turned toward the people. Other mass-garments were the *amice*, an oblong linen cloth covering the neck and shoulders beneath the alba and chasuble, and the *maniple* (*pl.* 53, *fig.* 3), a short species of stole, attached to the left forearm.

Vestments of the Pope.—The pope wore beneath the mass-vestments the *soutane*, a long robe of white wool or silk with narrow sleeves, and over this a short mantle of red velvet or flesh-colored silk. The *orale*, a colored silk cloth, was worn around his neck, wound about the shoulders, and fastened on the breast. Another special article worn by him on great ceremonies was the *tiara*, or triple crown; but in private he wore the characteristic red skull-cap and carried a double cross like that in the hand of the cardinal in Figure 5.

Vestments of the Cardinals.—Cardinals were attired entirely in scarlet, and wore a broad-brimmed hat tied under the chin with tasselled ribbons (*fig.* 5). Patriarchs and archbishops were distinguished by the *pallium*. This consisted of a band of white lamb's wool about three fingers wide, adorned with small crosses, and worn upon the shoulders in such a manner that a single end hung down in front on the right side, and two ends hung down on the left, one in front and the other behind. The ends were very short, and, like the stole, embroidered with crosses. The above-mentioned dignitaries wore the pallium only upon special occasions, and then only inside the church. The pope was never without it.

Vestments of the Bishops.—The special insignia of a bishop were the pectoral cross, the gloves, the ring (*pl.* 56, *figs.* 5, 6), which he received at his coronation and wore on all official occasions; the crook or *crozier* (shown in Roman style, *fig.* 12, and in Gothic style, *fig.* 13); and finally the *mitre* (an ancient form of which is seen in *fig.* 8, and a later one in *fig.* 9). The characteristic decoration of the mitre consisted of two bands hanging down behind, which suggest the fillet (*infula*) of the ancient Roman priests. This decoration was sometimes conferred upon abbots. In the early Middle Ages the *rationale* (*fig.* 7) was also a distinguishing mark of the bishops. It was a breast-ornament of precious metals and jewels, something like that worn by the high priests of the Old Testament. (See p. 161.) Subsequently it went out of use. For other cere-

monies than the mass, especially for processions, the *pluviale* took the place of the chasuble. This was a large cloak (*pl.* 53, *fig.* 2), and should not be confounded with the violet one with white fur cape which was worn by the bishop on his way to and from church. In the church itself he occupied a special seat of honor, usually an artistically-carved throne.

A large fur cape (*fig.* 4) was the distinguishing ornament of the provosts. We need scarcely remark that these mediæval costumes are, without any substantial change, still in use in the Roman Catholic Church. The Greek and non-European churches had less system in their costumes, and introduced many national peculiarities.

Vestments of the Protestant Clergy.—In the Protestant Church simplicity of apparel was originally sought on all sides, but in the actual application of this principle great diversity began to creep in, whence it happens that there are so many varieties in the dress of the clergy in different countries. In general, the cap in use at the end of the sixteenth century has been retained, though in a somewhat modified form. The same is true of the long black robe which had already belonged to the early secular clergy. In some places even the broad frill of the Middle Ages is still worn, but generally the so-called "clergyman's bands," which are, as we have said, the remains of the seventeenth-century collar, constitute the distinguishing neck-ornament of the Protestant clergy (*fig.* 11).

Conventual Clergy.—Beside the secular clergy stood the conventual clergy, whose sphere lay rather outside civil society. The fundamental conception of the conventual life was that of an ideal community having no need of the guidance of the priesthood, and consequently holding a more exalted position, yet standing in the same relation to the laity. Its members were independent of the secular clergy, being subject not to the bishops, but directly, through a series of their own superiors, to the pope. According to the order to which they belonged or the importance of their particular establishment, they stood under the direction of guardians, priors, provosts, or abbots; these, again, in their turn, being subject to the oversight of custodians and provincials. The female orders had corresponding officials, such as abbesses, etc. The head of a Greek monastery was called an archimandrite. Each separate order was governed by a general, who directed the affairs of the order in so far as these did not pertain to the pope.

Conventual Officials.—Within the monasteries and convents were numerous offices filled by the monks or nuns, such as those of reading-masters, kitchen-masters, cellarers, porters, sextons, etc. A most important division among the monks themselves was that of fathers and brothers, or clerical and lay. The former had received orders, could say mass, hear confessions, etc., and had a voice in the synods. The latter possessed none of these powers, and were bound simply by the three vows of poverty, chastity, and obedience; they participated in all the religious services, but in the lowest capacities; and in the mendicant orders they had to go

begging. Before becoming a member of any order the applicant had to pass through a period of preparation called the novitiate.

Religious Orders.—The importance of the religious orders in the early stages of modern civilization has often been pointed out. After the ancient Teutons had given up their natural mode of life, when a dense barbarism had deeply extended itself over the nations, these orders did in fact constitute ideal communities from which a higher morality, intellectual development, science, and useful arts were disseminated among the people. With the progressing development of the latter the real vocation of the orders was taken away; the unnatural principle upon which monastic life was founded came prominently into the foreground, and widespread corruption resisted all attempts at reformation. What had originally been the expression of a lofty religious enthusiasm became an empty pretext when multitudes entered the religious life as a means of livelihood. Their immense numbers were the cause of their destruction. Including those of less strict observance, more than half a thousand can be counted. Among them one hundred and twenty-four followed the rule of St. Benedict, one hundred and seventy-eight that of St. Augustine, and more than seventy that of St. Francis. We shall mention only the most important of them, representatives of which are exhibited on the lower division of Plate 53.

The Carthusians (*fig. 12*) were founded by St. Bruno in 1084; their habit is entirely white, the shoulder-cape (which is called among them the cowl, but in other orders the scapular) hanging down low in front and behind and united at the lower ends by broad bands of the same material; when outside their convents they wear black cloaks and capuchins.

The Trappists, founded in 1140 by the count of Perche and reorganized in 1664 by the abbé de Rancé, belong to the Carthusians. They are one of the strictest orders in the Church, the members being obliged to keep almost perpetual silence.¹

The Benedictines (*fig. 13*) were founded in the sixth century by St. Benedict of Nursia, who established in 529 the celebrated monastery at Monte Casino. St. Benedict and his disciples wore a garment entirely black, as all the monks had done up to that time; its cut varied in different countries.

Franciscans, or "Gray Friars:" (1) *The Capuchins* (*fig. 14*) belong to the widespread class of Minorite Friars. They received their name from the long pointed hood (*capuche*) which together with their long beard forms their distinguishing mark. Their rope belt ends in a scourge, and they wear sandals; but their rule is not over severe.

(2) *The Minorites* were founded in 1208 by St. Francis, who gave them the humble name of *Fratres Minores*, the lesser brethren. This order was

¹ De Rancé, on reforming the famous institution of La Trappe, seems to have taken as his device the text, "In the midst of life we are in death," and imposed as conditions perpetual silence, perpetual labor, perpetual contemplation of our mortality (Mrs. Jameson's *Legends of the Monastic Orders*, p. 167).—ED.

one of the most widely extended. It numbered as late as the beginning of the last century more than 7000 monasteries with fully 125,000 monks, and about 900 convents with 20,300 nuns. These large numbers occasioned the division into many separate congregations, all following substantially the same rule, but permitting many variations. The original habit of the Franciscans (*pl.* 53, *fig.* 17) consisted of a long gown of ash-colored cloth fastened with a white knotted girdle, and of a hood which was afterward attached to a shoulder-cape. To the Minorites belonged the barefooted Recollects, Celestines, etc.

(3) *The Franciscan Nuns* (*fig.* 21), who are usually called the "Gray Sisters," also wear a rope girdle, a white wimple or kerchief covering the neck and breast, a black head-kerchief lined with white, and when going out a large black cloak. St. Elizabeth of Hungary, the widowed landgravine of Thuringia, belonged to this order.

The Dominicans, or "Black Friars" (*figs.* 15, 16), were established by Dominic de Guzman, born in 1170 in Old Castile. The cowls and scapulars of the monks are white, those of the lay brothers black, and the over-mantles of both black. The dream of the founder's mother, that she would give birth to a dog spotted black and white, bearing a torch in its mouth to light up the globe, did not remain unfulfilled, for, as is known, the Dominicans were the most fervent advocates of the Inquisition and the burning of heretics. The costume of the Dominican nuns (*fig.* 23) corresponded with that of the monks.

The Carmelites, or "White Friars" (*fig.* 19), claim the prophet Elijah as the founder of their order. Such a claim probably sprung from their Asiatic origin, which circumstance also gave them their name, derived from Mount Carmel, where their first establishment was situated. At one time they wore a mantle striped black and white, afterward a black gown and a white cloak. The Carmelite nuns (*fig.* 25) wore a similar costume.

The Augustinian Orders, which were very widespread, claim to have been founded by St. Augustine, whose name they bear, and who was born in 354 at Tagaste in Numidia; yet it is not clear that they received their rule from him, or that any of these orders existed before the middle of the ninth century. The Hermits of St. Augustine (*fig.* 20), to whom Luther belonged, dressed entirely in black, but the Augustinian nuns wore a white habit and a black veil.

The Brigittines, one of the principal Augustinian female orders, was that founded by the Swedish princess Brigida (Bridget, Santa Brigitta) in 1344; its members (*fig.* 22) wear a black garb with a white wimple and a head-dress striped black at the edges.

The Society of the Jesuits (*fig.* 18), the most influential of all the religious orders, was founded in 1540 by Ignatius de Loyola, a nobleman of Guipuzcoa. The Jesuits wear the costume of the secular clergy, and, as the sphere of their activity lies in the outer world rather than within their convent-walls, they are allowed to conform to the costumes of the countries in which they live.

The Nuns of Port Royal (*fig. 24*) were an influential order in France; this order received chiefly members of the aristocracy into its ranks.

Military Orders.—Besides the monkish orders, the mediæval Church had military-religious orders, who took the three vows of poverty, chastity, and obedience, and whose avowed purpose was to combat the infidels both in the East and in the pagan parts of Europe. Their origin was due to the Crusades, and their task was to protect the numerous pilgrims journeying to the Holy Land. They soon reached a high degree of renown.

The Knights Templars.—The oldest of these orders, the Knights Templars, was founded in 1119, and was violently suppressed in 1312 by Philip IV. of France, nominally on account of its vices, but more probably on account of its riches. The members wore over the armor of the period a white cloak with a red cross.

The Hospitallers—or, as they were called from their patron, John the Baptist, the Knights of St. John—constituted another order. Their original purpose was to nurse sick pilgrims and to fight against the infidels. They accumulated wealth and possessions, the defending of which against the Turks kept them in good discipline; but after the loss of Rhodes and the defence of Malta they sank into the indolent enjoyment of what remained.

The Order of Teutonic Knights originated later than either of those just mentioned, acquired dominion over the present Russian Baltic provinces, and aided in laying the foundations of the modern Prussian monarchy.

All these orders were governed by grand masters elected by the members, and their various dependencies, scattered throughout Europe, were governed by commanders appointed by the grand masters.

In later times many other orders of knights were founded after the model of those described, but, though their statutes often included noble purposes, they never attained such prominence. They were merely associations founded by monarchs, the admission to which, being attended with difficulty and formalities, constituted an exceptional reward or favor. Their organization was for the most part too complicated and minute to allow us to venture upon a description of it, and, besides, their effect upon the march of civilization was unimportant. Figures 1–6 (*pl. 54*) illustrate the costumes of some of the knightly orders from the fifteenth century down to our own. It should be noted that (with the exception of the last, which was specially designed as a distinctive dress to be worn on gala occasions) all consist of the ordinary garb of the period with the addition of the insignia of the orders.

Insignia, Crosses, and Decorations.—Figures 7–36 (around the margin) are the crosses, medallions, and insignia worn attached to a ribbon or chain. A few of them belong to the following orders: St. Andrew (*fig. 7*); St. James (*fig. 8*); the Austrian order of the Dragon (*fig. 9*); the order of the Holy Sepulchre (*fig. 10*), said to have been founded by Godfrey of

Bouillon in 1099; the order of Silence (*fig. 11*), founded by Guido of Lusignan in 1195; the order of St. Catharine (*fig. 12*), the duty of whose members was to protect the pilgrims visiting the relics of that saint on Mount Sinai; the order of the Annunciation (*fig. 13*), etc. Over two hundred and thirty different orders are known to have existed, and of these over one hundred still survive.

As already indicated, there has been from the Middle Ages to our own day, besides the monkish and knightly orders, a variety of associations, guilds, and confraternities, the members of which sought by means of statutes and rules, but without relinquishing their social position, to render their own lives more holy or to exercise a beneficial influence on the world. In the beginning the tendency of these bodies was toward asceticism and even self-mortification, but eventually, and particularly toward the close of the last century, charity became their motive. In France especially many societies were organized to compete in works of humanity and enlightenment with the Protestant unions and associations.

Church Service.—Mass and liturgy constituted the central point and outer form of the church service until Protestantism restored to instruction by means of the sermon its original importance. The separation of the choir from the congregation corresponded to the strict division into clergy and laymen. This distinction was made even more striking by the erection of the chancel screen. The altar formed the central point of the choir, over the tomb or at least the relics of some saint. Originally it was a simple stone table (*pl. 55, fig. 1*), but gradually it developed into magnificent structures and winged shrines, such as are shown in Figure 2. The altar was the spot where the sacrifice of the Saviour was again consummated and the mysterious change of the bread accomplished. Its outfit and adornments were consequently exceedingly rich and symbolical. The host was preserved in a separate shrine near the altar, usually in or on the wall of the choir, but sometimes in an artistically constructed tabernacle with ornamented doors (*fig. 3*), or even in a separate building within the church, such as the famous tabernacle of Adam Kraft at Nuremberg. The stalls, or seats intended exclusively for the clergy, surrounded the altar; they served a liturgical purpose in the choir (*fig. 4*). As is well known, masterpieces of wood-carving occur among them which deserve the fullest recognition in the history of art.

The baptismal font formed to a certain extent the transition from the clergy to the congregation. In Southern countries, as in Italy, it retained longer than elsewhere its primitive form of an enclosed and roofed bath (*fig. 5*), and it was often, as in the famous baptisteries of Pisa and Florence, situated in a separate chapel apart from the church. In Northern countries it stood usually between the choir and the body of the church. It was made of stone or bronze, and varied in style from the simple Roman forms to the elaborate Gothic (*fig. 6*). When the custom of baptizing by immersion fell into disuse, small vessels, such as the well-known Nuremberg basins (*pl. 42, fig. 13*), were used.

The pulpit stood in the body of the church, usually against one of the pillars (*pl.* 55, *fig.* 8). By means of architectural and sculptural decorations it contributed to the general ornamentation of the church edifice.

The religious ceremonies of the early Christians lacked determinative form, the more so as motives based on principle led to the rejection of pagan models. Still, we may perceive from the Catacombs, which were places of refuge during the early persecutions, that specially consecrated spots were chosen, generally near the tomb of some distinguished martyr (*pl.* 57, *fig.* 1), for their worship, and that they also used some ceremonies. The best known of their celebrations were the love feasts and the commemoration of the Last Supper, from which originated the sacrament of the communion.

The Ritual of the mediæval Church was developed through the practice of centuries and the decisions of many councils. It required a consecrated altar to be covered with three white cloths, the uppermost hanging to the ground at both ends, and to have in front an *antependium* or veil, either embroidered or ornamented with metal reliefs. A crucifix stood in the centre of the altar, flanked by two lighted candles, and at its foot a tablet with prayers, while a similar tablet stood at each end. On the right or Epistle side of the altar stood the desk for the mass-book, with a lighted candle at its side. The left side, that of the Gospel, afforded room for articles which were not constantly on the altar. The chalice and host were placed on a white cloth during the consecration, and after it the cloth was folded and placed in a special case. A linen lid or pall covered the chalice; a similar cloth was used for drying the implements. When brought to the altar at the beginning of the mass the chalice had to be covered with a veil having ornamented edges.

The color of this veil, like that of the lid of the chalice, of the antependium of the altar, and of the vestments of the celebrant priest and his assistant deacons, etc., varied according to the seasons and festivals of the Church: white was worn at all feasts of the Saviour, of the holy virgins and confessors who were not martyrs, on Corpus Christi, All Saints' Day, etc.; red was used on Pentecost and at feasts of the apostles and martyrs; black on Good Friday and at funeral masses; violet during Advent and Lent and on occasions of penance, Ash Wednesday, etc.; and green on other stated days. As it might occasionally happen that divine service would have to be celebrated at altars unprovided with the necessary implements, flat tops with all things necessary for saying mass were consecrated as portable altars (*pl.* 56, *fig.* 11). In the Greek Church a consecrated cloth spread upon a table sufficed to constitute the altar.

Church Utensils.—All these and other ceremonies and arrangements have remained in use in the Roman Catholic Church essentially unchanged. But the form of the vessels and the decoration of the vestments varied greatly with the tastes of each period, though the Church sought by its rules to regulate them. Plate 56 exhibits a number of ancient styles. The *aquamanile* (*fig.* 22), a bronze vessel from which the

altar-boy poured water over the priest's hands during the mass, is no doubt of very ancient origin. It calls to mind the shapes of the Gallo-Roman earthen vessels which have occasionally been found in tombs and ruins in France. Down to the fourteenth and fifteenth centuries such vessels, which were not strictly sacred vessels, bore the shapes of men, animals, and mythical subjects. A favorite shape for the altar candlesticks was that of a dragon (*fig. 14*). Such forms were also in profane use, and testify to the hold which the ancient Teutonic legends and poetry, which took great delight in the description of contests with huge serpents, had on the popular imagination, and which, in representing such monsters in artistic forms, celebrated new victories over them. Oriental influence is to be recognized in the jugs and pitchers (*fig. 15*) made of rock-crystal with metal setting which are preserved in Venice. The Church, however, sought to remodel all foreign elements according to its own views, and to make them symbolical, as is shown in the enamelled oil-vessel in the shape of a dove (*fig. 21*). But it was owing to the industrial arts, especially those of the goldsmith and weaver, that, after many awkward attempts, like the Munich reliquary (*fig. 10*), continued down to the eleventh and twelfth centuries, a uniform and expressive style was created for church-vessels by means of the Roman and Gothic forms. We place together for purposes of comparison the famous chalice of the Bavarian duke Tassilo (*fig. 1*) and a Gothic chalice (*fig. 2*). The holy-water pot (*fig. 17*) is a specimen of early Roman art; the incense-vessel or *thurible* (*fig. 16*) and the cross (*fig. 19*) are later Roman; and the *ciborium* (*fig. 20*), or receptacle for the host, marks the transition to Gothic art.

Church Rites.—Figures 2 and 3 (*pl. 57*), copied from the well-known paintings of Rogier van der Weyde at Antwerp, represent the principal rites of the Roman Catholic Church. Figures 4 and 5, from Italian miniatures of the fifteenth century, represent two scenes illustrating the service for the dead, the former being a "death-watch," while prayers are recited for the deceased; the latter is a convent burial: the flat coffin has received the last blessing and has been lowered into the grave, which the spades of the monks are filling with earth.

The Protestant ritual, which furnishes the subject for our next illustration (*fig. 6*), the rite of the Lord's Supper, the communion being represented under both species (that is, both the bread and the wine administered to laymen), assumed, as we have before said, different forms in different countries. In some places, especially where the Calvinistic creed had prevailed, and even in some localities where Lutheran ideas were held, an iconoclastic fury raged against all the ancient ceremonies. In others the ancient forms were piously retained, while it was sought to invigorate them with new signification. Thus it was that in Nuremberg, even down to the beginning of this century, the mass was said, not, however, in Latin, but in German. In the Protestant churches of that city the relics of the saints still remain untouched, even if no longer venerated, and in one of them a lamp burns perpetually in honor of its founders. The cus-

tom of spreading a cloth under the host in communion (*pl.* 57, *fig.* 6) has been abolished probably everywhere. Figure 7 represents the rite of baptism in the Reformed Church. It is devoid of all appeal to the imagination, but the large number of witnesses gives it the solemnity of a judicial proceeding. The main points of difference between the Reformed and the ancient religion were founded upon the difference of creed, and this can least of all be pictorially represented.

Quite opposed to the simple forms of Protestantism stands the elaborate ceremonial of the Greek Church, from the ritual of which Figures 8 and 9 are taken. Although not inclined to admit that the Greek Church best represents the spirit of Christianity, we cannot deny that it has preserved many remains of the primitive Church. Among them we may mention, first of all, the original, fraternal relationship of the members of the congregation, and the "kiss of love" which is used in Russia on the occasion of religious celebrations. In our illustration of the baptism (*fig.* 9) the child, after being lifted from the font, is, in accordance with an old Byzantine custom, presented with the picture of the saint who will be his protector through life. The rite of consecrating water (*fig.* 8) is of mediæval origin, and is also found in Western Europe.

It has been justly remarked that the organization of the Church was the only possible system for inaugurating the work of Christianity. In a condition of society when half the race was utterly degenerate and the other half very slightly developed, the soft pleadings proper to the essential nature of religion could not have controlled the unstable character of the Southern people intent upon momentary pleasures, or moulded the rough, unbending character of the Northern nations. From the very beginning the Church judiciously combined severity and clemency, especially with the Teutonic peoples, who were entering upon the field of history.

Yet because there was a fundamental lack of accord between it and both the above-mentioned divisions of the race, the Church could not prevent the growth of hostile elements which threatened its progress and its very existence. It sternly required the pagan Germans "to renounce Wodan, Thor, and Saxnote as devils, together with all the fiends of their company." In converting these pagan gods into devils it laid the foundations of that powerful infernal kingdom which has puzzled and frightened the human mind since the Middle Ages, and which produced during the sixteenth and seventeenth centuries such sad phenomena as the trials for witchcraft. But, being lenient to other pagan traditions and contenting itself with giving them a Christian interpretation, the Church created a popular belief which often found poetic expression in sagas and legends, but which also, by admitting the existence of numberless unseen powers, laid the foundations of that superstition which led to the belief in ecclesiastical miracles.

A ghastly scene of witchcraft and diabolism is presented on Plate 58 (*fig.* 10), which is copied from an allegorical painting by Michael Herr

of Nuremberg in the seventeenth century, the age in which such notions were most prevalent.

Superstition: Amulets.—Figures 1–6 represent amulets used from the twelfth to the seventeenth century, all of which, except the one shown in Figure 2, are in the Teutonic Museum at Nuremberg, as evidences of the second period of superstition. They are: (1) a small piece of slate having engraved on one side the figure of a bird holding a flag, and the word *IAΩ*, and on the reverse the frequently-recurring words, *ΑΒΡΑΣΑΣ ΟΦΙΡ Δ*;¹ (2) a triple-faced head representing the Trinity circumscribed with the words *Pater, Filius, Spiritus* (Father, Son, and Holy Ghost); (3) a shark's tooth set in silver; (4) a hand with the thumb inserted between the two fore fingers; (5) a so-called "eagle stone," surrounded by metal bands, and supposed to be of miraculous origin, though it was merely a lump of crystal such as occurs in clay deposits; (6) a silver *sigillum leonis*, which was the favorite talisman of the seventeenth century when astrology was in full bloom. Frequently the amulet consisted merely of a bit of parchment or paper with some potent prayer or magical words inscribed upon it, and deemed efficacious against danger from fire and water, knife or blow, witchcraft, etc. The Church sanctioned such things with consecration down to the eighteenth century, and perhaps even later.

Astrology.—The learned world, as well as the populace, had its superstitions in the Middle Ages, but they sprang from the confused and mistaken interpretation of the newly-awakened sciences. First among them ranks astrology, or the art of learning from the heavenly bodies the fate of individuals and of nations. This pretended art was developed into an elaborate system, and it has left numerous manuscript and printed works. During the sixteenth century noble families were wont when a child was born to have its horoscope drawn; that is, the position of the stars at its birth was ascertained, and the future fate, as well as the character, of the infant was prognosticated. In every large city there dwelt so-called mathematicians who devoted themselves to that work, and besides to the manufacture of sun-dials, calendars, etc. Figure 9 represents a horoscope showing the positions of the planets relative to the ecliptic.

Alchemy, or the art of making gold, was another of the secret sciences of those ages. Even kings indulged in it or employed others to practise it, sometimes punishing failure with the gallows. Figure 11, copied from a painting of David Teniers, introduces us into the laboratory of an alchemist.

Necromancy, or the "black art," which sought by means of magic to penetrate the secrets of Nature, was another of these sciences. It used a secret key or set of signs, which we represent in Figures 7 and 8 (*pl.* 58). They are taken from the works of Theophrastus Paracelsus, a man who,

¹ Abrasas or Abraxas was a Greek symbol used by the Gnostic sect to denote the three hundred and sixty-five emanations which they believed had taken place from the supreme principle of Good. The letters, taken numerically, in the Greek notation make 365. Ophir is the land whence Solomon brought gold and sandal-wood for the temple.—ED.

besides writing much that is true and sensible, filled whole volumes with nonsense, and who furnishes an example of how far self-deceit can carry a man when the entire age follows a delusion.

Health Calendars.—In general almost every science had its pseudo-science. Medicine was full of unexamined traditions and carefully-preserved superstitions. The most singular and generally worthless recipes were spread by copying, and were found in almost every house. The so-called "health calendars" (from one of which *fig. 12* is taken) were among the most widespread productions of the early printing-press. They informed the credulous what days, what juxtapositions of the planets, etc., were most favorable for bleeding, hair-cutting, etc., and from what parts of the body bleeding might be practised with bad, fair, or good results.

Theosophy.—With theology was soon united theosophy, which sought to place the seat of the mind in the interior of the heart, and to reduce to a mechanical process the work which always has been and always will be the task of the moral nature of man.¹ Almost without exception the theosophists used the Revelation of St. John, weaving its texts into fantastic combinations and using pictures to express their ideas, because even the unformed language of the sixteenth and seventeenth centuries had too much critical force to lend itself to the expression of all their nonsense. The theosophical ring (*fig. 13*) is taken from a large work on the subject which contains many similar illustrations. At first sight they seem important, but on closer examination they fail to convey the slightest idea of what their author could have meant. However, theosophy was almost the only one of those false sciences which had any practical consequences. It gave an impulse to our modern philosophy, and Jacob Boehme, who may in a sense be considered the father of the latter, occupied for the most part a theosophical standpoint.

All these scientific superstitions were cast aside when, by the establishment and increase of universities, knowledge was taken from the charge of dilettanti and amateurs and placed in the care of well-qualified professional men.

Superstition, however, lingers among the people to this day. It would have been a praiseworthy task had the Church, going hand in hand with science, labored to destroy it as well as to save speculative philosophy from that modern one-sidedness which divides the large empire of complete existence into halves, denies the opposite one, and administers its own on unsound principles. Unfortunately, the Church judged it best to ignore its natural ally, and, relying on its own claim of absolute power, to fight with fire and sword against all rivalry.

The Auto-da-fé.—Plate 59 represents a Spanish *auto-da-fé*, the outcome of this unfortunate policy, which sacrificed entire nations and countries.

¹ The author means that the Theosophists and Mystics discarded the dialectical methods of philosophy and theology, and sought to obtain a knowledge of God by the direct means of intuition and contemplation.—ED.

We take it for granted that every reader knows the nature of such a scene, and we shall only state that our illustration is taken from a rare copperplate of an *auto-da-fé* held at Madrid during the reign of Philip II. The name of each victim is engraved upon the original. The king and his courtiers viewed the scene from a gallery. Immediately beneath is represented a young priest who has been adjudged guilty of heresy. His sentence is being read to him, while a prelate places about him a cape illustrated with scenes of hell. The chalice which he has to resign is seen, in accordance with the manner used at that period, in the hands of a server or junior cleric. The other condemned persons move in a long procession out of the city-gates. One of the victims who had died during the trial is carried in her coffin. Mounted servants of the Holy Brotherhood and knights of the order of Calatrava accompany the train. The victims, who are all members of noble families, have each an escort of honor, composed either of fellow-noblemen or of monks, for they are in their sad condition the property of the Church, and are to be solemnly delivered as a consecrated offering to the powers of hell.

[The religious persecutions of the sixteenth century had a double origin. They proceeded not merely from the struggle of the priesthood to suppress the new claim to freedom of conscience, but from the efforts of monarchs to render their dominion absolute and to extirpate the germs of political liberty. Hence the resistance was in like manner twofold, and in the long and memorable contest between the Dutch provinces and their Spanish sovereigns the issue at stake was the right of a people both to think for itself and to govern itself. It was not, however, till long after this and similar conflicts had ended that the full results and necessary consequences of the principles thus established began to display themselves. Underlying the social transformations, the material improvements, and the intellectual achievements of the past century is that fermentation of ideas which began with the Reformation, and which, after a long period of apparent quiescence, sprang into renewed activity in the latter part of the eighteenth century, since which it has known no abatement. The establishment of the great American republic, the overthrow of the ancient monarchy in France, the fundamental changes in the political institutions of nearly all the countries of Christendom, and the abolition of slavery in the United States have been the chief steps in what must be regarded as a general movement of which the end is not yet.—Ed.]

MODERN CIVILIZATION.

(Plate 6o.)

ONE is puzzled, in considering that distinctive period of the world's history which includes the present day, whether to assign it three centuries, or one, or fifty years. So rapid has been material progress, such an impulse and expansion have been given to intellectual activity, so sharply drawn have been the stages of that general movement, and so specially marked have been its results within the past two generations, that it is not easy to make a hard and fast definition of Modern Culture and of the field of time which it covers.

At the beginning of the seventeenth century, that birth-period of the modern age which is aptly styled the Renaissance had reached its close. When we think of it we are wont to think chiefly of its achievements in the fine arts and elegant literature. Lapped in fancy, "of imagination all compact," the new world was enjoying its youth. The printing-press, just placed in its hands, it used, for the most part, as a toy. Metaphysics and theology were topics discussed in a dead language, and poetry, though highly valuable to us as illustrating manners, and to contemporaries as training and elevating literary taste, was not particularly promotive of practical research or the advancement of human well-being. Long after the close of the sixteenth century the use of a dead tongue still impeded the popularization of scientific inquiry, which thus remained the exclusive province of a few—a select few, who wrought alone and builded on a narrow basis. The Church, at least in Northern Europe, had set them the example of partly abandoning the vehicle of expression which they had borrowed from her. Had they followed that example and invoked the aid and sympathy of the laity, progress would have been expedited. A century separates Copernicus from Kepler, Harvey, and Galileo, and the minor coadjutors who joined them in heralding, nearly another century in advance, Newton and Leibnitz.

Gradually, with the spread of popular intelligence and the polishing of the vernacular tongues, investigation drew recruits from a wider field, and became correspondingly more effective. Bacon told his contemporaries—what they well knew before, and had been practising in the affairs of every-day life—that the way to use facts was to observe and compare them. The task of so doing in the cause of science was entered upon as soon as the besetting obstacles began to disappear. The difficulties encountered by Galileo stifled independent inquiry in his latitude for nearly two centuries, and it was not until the closing years of the eighteenth century that Italian acuteness was again enlisted

in the pursuit of natural philosophy. Galvani, Spallanzani, and Volta then did much to redeem the long eclipse. Meanwhile, France and England strove in generous competition. Descartes and Boyle were coincident inventors of the science of chemistry, and they were followed in both countries by a throng of competitors in the analysis of matter. In astronomy, Newton, Flamsteed, and the Herschels did little more than keep step with the Bernouillis, Maupertuis, and Laplace. Mathematics, the indispensable ally of these two sciences and of most others, had, from its close approach to abstract philosophy, been a leading study throughout the historic period. It was cherished in the cloister when more concrete studies were, beyond a certain limit, repressed. It was therefore in a tolerable state of preparation for its new task. Progress, however, seized it as well as its fellows. Napier eliminated many of its practical intricacies by means of his logarithmic tables, and Descartes trained to working harness the crude algebra of the Arabs. Still, advance in mathematics has been rather in method and application than in principles. Newton thought Euclid only a book for children, its propositions being self-evident. But Euclid, more or less developed, is still a textbook, while Newton would not recognize his own ideas of light in the modern theories of it—electro-magnetic, undulatory, etc.—any more than his chronology in the epochs of a modern geologist.

“Modern” is thus a word we are compelled to use in contradistinction to a period removed from us by four or five generations. The pioneers of research who flourished in the first half of the three centuries or less we are considering seem to us the ancients. They were the discoverers or the first superficial explorers of new lands which others have occupied and developed. Many of the latter, indeed, so quickly and continuously has their work been buried beneath that of later improvers, have in turn fallen back into antiquity. Chemistry, for instance, has a new nomenclature, a new system, and new bases, besides having its relations and scope extended beyond the wildest dreams of its founders. The water we drink, the food we eat, the soil that yields it, the fuel we burn, the air we breathe, and the teguments composing our mortal frame are analyzed with a precision and formulated in terms that would have been incomprehensible one-third of three centuries ago.

Not merely do expansion and correlation pertain to the sciences, but multiplication as well. They grow out of each other, like the polyp, by gemmation. Before Buffon, a short century ago, there had been no historian of animal nature since the fictions of Pliny. Buffon compressed the whole story of the earth and its inhabitants into a few volumes, largely of rhetoric, and then folded his arms across his laced and gilded vest with the satisfaction of having exhausted the theme. The subject is now parcelled out among many sciences, each subdivided into specialties, and none claiming to have passed the elementary stage. Geology has exhumed or begun to exhume a buried world more instructive than Pompeii, and summons to its study, for an indispensable revision

of their former conclusions, the astronomer, the naturalist, and all their associates. The tree of knowledge grows before our eyes. We have not mastered one of its twigs. Yet we have plucked fruit from them all in increased comfort, health, means of enjoyment, intellectual and social resources, and physical and—speaking of the race in mass—mental vitality. Learning, no longer concealed in mystic phrases and an unknown tongue, has become practical. It visits the dwellings of town and country, accompanies the mariner round the globe, and places him at every haven within a few minutes' speech of his home. Physical science, not assuming to overpass the frontier of matter, has yet extended that domain so far as to trace and control forces which were formerly considered abstract. With the aid of statistics it is gradually formulating such apparently transcendental tendencies as those to crime, suicide, and insanity, preparatory, we may hope, to the contrivance of some method of checking them. This hope is justifiable, for it is not easy to concede that these tendencies are aggravated by civilization, in view of the established fact that it has increased the stature, strength, and longevity of man, while it has by education given his intellect the means of protecting itself against eccentricities born of ignorance, and through the advancement of law supplied a better regulation of his passions. If a sound body implies a sound mind, the advances made in medicine and hygiene which have so notably aided the one cannot have failed to promote the other, were there no other perceptible means to that end, and were the increased strain upon the mental faculties even greater than can be properly traced to the demands of civilization.

Among the new sciences which least belong to physics may be named one which ranks high among the adjuncts of culture, and which can hardly be dated farther back than a century and a half, although it claims the ancient and comprehensive name of music. Cultivated in competition by the Teutonic and Romance races, it has come to the front for education and intellectual recreation everywhere, in the home and the theatre. It has almost elbowed out the old drama, and the playhouse has become, as frequently as otherwise, the academy of music, the opera-house, or the conservatory. The beer-drinkers of Teniers and Hans Sachs have developed into connoisseurs of music. The devotee of Liszt, Mendelssohn, and Rossini can no longer be a boor.

Musicians style themselves artists. They are supported in this claim by the correlation among the fine arts. The cultivation of music implies, generally, the prevalence of the artistic sense. It would be unsafe, however, to infer from the progress made in music a like advance in painting and sculpture. Our highest attainments in those departments fall short of the glories of the Renaissance. Still, both of them have been popularized to an extent unknown to that period. The masterpieces of the chisel and the pencil have been reproduced and made familiar to all. This training of the eye and the taste has caused the production of innumerable pictures, engravings, and works in marble and bronze

possessed of greater merit and truth to reality than the average work of three centuries ago. The same may be said of objects in clay and glass. We have no Luca della Robbia or Palissy, but fair copies of their best pieces are at the command of every one, and many thousands of households have in daily sight—and, what is more, in daily use—articles of this class superior in elegance and delicacy of shape and texture to anything with which the contemporaries of those artists were familiar. Here is a constant and all-pervading source of refinement which certainly amounts to progress in art and its highest uses.

While each home is to this extent a little museum, Christendom has made and thrown open to the masses immense and comprehensive collections illustrative of the arts of all nations and ages. National and international exhibitions have, since the first in London in 1851, supplemented these, and, as it were, put them in motion over land and sea. Competition in invention and the elevation of true taste have thus received an impulse which, marked already, belongs still more to the future.

What is said of the fine arts is applicable in a less degree to literature. Its career consists rather in the multiplication and expansion of what is good than in restricted or local rivalry of what is the very best. Yet this remark, strictly taken, does scant justice to our times. Leaving out a few names which "are like stars and dwell apart," the work of the modern pen is the best that has been done. There is much more of it, and more of it that is of high quality. The activity of a new engine—the press—and the ever-impelling movement of the popular mind have kept writers up to a high standard, both of matter and of manner. Milton, Racine, Pope, Schiller, Goethe, Byron, are some of the brighter lights of the near sky. Passing from the master-singers, the story-tellers of this latter day—Scott, Dickens, Hugo, Tourgenieff, Hawthorne—are a group by themselves, with only their followers to compare with them. And then the vast literature of science, much of it appealing as gracefully as forcibly to the imagination! The styles of Humboldt, Tyndall, and Lyell are worthy the grandeur of their themes. Lucretius is more poetic than Darwin in his treatment of the evolution theory, but the greater solidity and precision of the latter, who never thought of poetizing, form an ample atonement. In history the old chronicles are but *mémoires pour servir* to the moderns, who have fallen heir to their accumulations and collated them with a thoroughness before unknown. We thus know more of the real political life of some periods of the past than the mass of contemporaries themselves knew.

One department of literature—humble, perhaps, yet valuable to history, and still more valuable to the masses who are beginning to be the makers of history—belongs wholly to the era under notice. This is the periodical press, more especially the newspaper. This was an impossibility prior to the establishment of a cheap and regular, not to say rapid, system of intercommunication. Another requisite was a large class of readers. Mails and readers have come, and the world has some twenty-five thousand

periodicals, half of them belonging to the United States. The literary character of these publications, taken altogether, improves. They convey every kind of information, often in considerable fulness and detail, and usually in such shape as to encourage rather than discourage the desire for more complete knowledge. Doubtless there is a waste of time in perpetually "seeking after some new thing" merely because it *is* new; but the ill-effect of newspapers in frittering away the attention is much exaggerated, and an excess of trivial knowledge is a less evil than would be the loss of that knowledge which many get from newspapers alone. Above all, these searching chroniclers, that bring the "fierce light" of free discussion to bear upon the events and concerns of the day, can but, in spite of faults and blunders, be the foes of misdoing and injustice, which thrive on ignorance and darkness. Their growth has proceeded *pari passu* with that of free institutions. The periodical press belongs, like liberal government or the revival of it, to strictly modern times.

Political progress has hardly kept pace with other movements for the better. In Europe, only Great Britain, Holland, and Switzerland had even the pretence of a free government down to the close of the eighteenth century. In England, till then and long after, the oligarchy of titled landholders held sway, with no more regard to popular rights than their own interest compelled them to show. In Central and Southern Europe representative government remained practically unknown until within the past few decades. The activity of the press, the aspiration to national unity, and the extraordinary impulse given to trade and production, have been leading factors in bringing about a change in this respect. Constitutions formally engrossed on paper or parchment, with the usual outfit, borrowed, after long delay, from the Romans, of a dual legislature, are established almost everywhere, even in the lately-enslaved and partly Mohammedan provinces of Western Turkey. Absolute power of war and peace is yet retained by the executive, save in the United States; and this, aided by the maintenance of large standing armies, promotes the survival of a jealousy among nations as units which has not yet yielded to the constantly increasing current of friendly intercourse among their individual citizens. The degree of practical liberty enjoyed by the people is generally greater, however, than might be inferred from existing drawbacks. Refinement of manners and the spread of education have increased their respect for themselves and for law, and rendered repression less necessary.

Popular education is one of the distinctive features of the era. The duty of the state to make provision for it, and to that end to exert on occasion an authority overriding the authority of the parent, is generally recognized. The aim is to place the faculties of every child in train of equipment, and to create a militia of science and culture from whose ranks the regular force may constantly be recruited. The proper development, not of the intellect alone, but of the *physique*, is kept in view, assuming that what moral health will not ensue from health of mind and body may be supplied by the home, or, in its special way, by the Church. Formerly,

the Church claimed entire control of the province of education, but within the three centuries there has been so much question as to what is the Church that the state and the people have relieved it of the charge, and left it to a degree of independence on its own part under which, in its various forms, it has thriven wonderfully. It began in Judea on the voluntary system, and is at length coming back to it, with results that speak in the clustering spires that rise so thickly throughout the land side by side with the schools. The battle of the creeds is no longer fought with secular weapons. Catholic and Protestant can scan with equal eye the scarred stump of the Smithfield stake or the long-deserted torture-chamber of the Inquisition. Both are fain to preach tolerance: it is wholesome for both. The religious sentiment is ever existent in man, and may—nay, must—be appealed to by both through the medium of his intelligence. Their ancient idea of atheistic science is a delusion. Science will never reach the line where religion begins. When the two clash, it must be in the guise of mere theory on the one side and superstition on the other.

Meanwhile, schools of theology abound and increase, as well as schools of science. The aggressiveness of the Church expends itself in attacks upon immorality of all kinds at home and upon the debased superstitions of semi-civilized and barbarous races abroad. In both these fields its value as a civilizing influence is unmistakable. In new countries it has usually been piloted by the trader, but in some regions—new in the sense of being hitherto untried, as the Levant, for example—it has accomplished, to all appearance, more in the way of enlightenment than has yet been achieved through the operations, direct and indirect, of commerce. Real education was unknown there until introduced by missionaries. In the islands of the Pacific also this class of devoted men have attested their worth as civilizing agents. They have there counteracted, so far as was permitted by the feeble power of moral resistance possessed by the natives, the destructive effect of collision with the intelligence and energy, selfishly exerted, of a superior race.

In following the missionary and the merchant around the globe we are brought to another of the great features of the modern movement, the wondrously augmented commerce which has united in relations of interest all nations. Regions which figured on the maps when many of us were schoolboys as “unknown” have been made to give up their secrets. The last of them, Equatorial Africa, is in process of penetration by railways and steamers. That *crux* of generations of geographers, the source of the Nile, is settled. Every part of the earth capable of being the habitation or of contributing to the convenience or luxury of man is at his command. The world is one great mart, all its products “in sight,” all its merchants “on ‘change.” Chance has been nearly eliminated in the transmission of commodities, and of intelligence in reference to them. Demand and supply closely balance each other. The chances of the seasons, of war, or of other casualty are reduced to a minimum in their effect on general trade by variety in sources of production. Failure at

one point is checked by redundancy at another. Civilization, multiplying wants, has at the same time multiplied the means of gratifying them. New arts are accompanied by new materials so closely that it is sometimes difficult to say which of the two comes first. A gum from the trackless forests of South America supplies numberless fabrics for luxury and use. A continent at the antipodes, scarce a century known, sends sheep and cattle to feed and wool to clothe the British people. Increasing millions of inhabitants require for their homes, factories, and counting-rooms more ample, cheaper, and better light; and petroleum seems to rise from the depths of the earth to furnish it. The treeless and freezing steppes of Central Asia call for both light and fuel, and the same singular liquid stands ready in overflowing volume on the shores of the Caspian. The harvests of India supplement those of Russia and California. Coal, the *primum mobile* of industry, is unearthed in unexpected places, often precisely where it is most required. But there is no need of any extended allusion to the multifarious and unexampled development of modern commerce. It has been the pride of the nations to exhibit its results in competitive expositions. We are made familiar with it by incidents and objects of daily observation, each of them, and still more the aggregate, unknown a century or two ago. For one item Brazil, a wilderness barely known when coffee was first introduced into Europe, now ships that berry, no longer a rare luxury, but the regular diet of the cottage, in annual bulk equal to the entire tonnage of all mercantile fleets at that period. Tea, a twin novelty in the eyes of Pepys, supports a similar marine. The impulse in this way given to their industries has enlisted in the cause of order and peace the most backward and unenlightened peoples. The Dyak has found head-hunting unprofitable, and for a like reason the Malay has abandoned piracy—both of them, of course, under a little wholesome pressure. Slaves have ceased to be the leading article of African export, and almost while we write the Russian advance along the Oxus and the Attrek has liberated thousands of Persian slaves and given the Turcomans better employment than kidnapping, the Circassian slave-trade having been previously abolished by the same power. The empire of Aurungzeb, no longer torn by ceaseless civil war and the outrages and exactions of a host of petty tyrants, is peaceful and prosperous under a single control. China derives corresponding advantage from a contact with the “outside barbarians” which she did her best to repel. Seemingly unapproachable, by reason of her mere bulk, to reform from without, she is slowly improving her ancient polity on modern lines, and meanwhile sets less populous and more arrogant Europe a very fair example of internal repose.

Europe, at the same time that she thus impresses her ideas upon old nations like China, Japan, and India, leaving them slowly to leaven the solid mass, does more rapid work by transplanting scions from her own stock to new soil. She has within a few generations built up great states in the most distant quarters of the globe, using her own manners and political institutions born of her own. The populations of these new

nations probably equal, combined, her own of the seventeenth century. To these inchoate empires the destinies of humanity in the future will be in large measure committed. They bring to bear upon boundless material resources the energies of youth, little trammelled by prescription and tradition. There are indications that among them too, as among their parent communities, contests for supremacy are to occur. But these belong to the future. We have grounds for the hope that humanizing influences already gaining force will moderate their acerbity, if unable wholly to exclude from their decision the *ultima ratio* of war. Let us not be utopian. Man is an animal, and a fighting animal. He still selects his idols from the battlefield. Yet if in his civilized character he has been able to teach subject savages that war "does not pay," perhaps he may one day learn his own teaching.

In rapidity and magnitude of extension distant commerce has not been exceeded by the more local trade between adjacent or closely-neighboring countries. And this has been quite as promotive of peace and progress. Throughout the United States—that is, the greater part of the North American continent—absolute free trade prevails, with beneficial results patent and familiar to all. The movement of persons and property between the various European states remains obstructed by custom-houses and by some remnant of passports. If we call the tariff, however, simply a domestic tax and the customs officials tax-collectors, we get another view of the system. Its operation is gradually becoming smoother and its methods less vexatious. Certainly, it has not availed to prevent an enormous growth of traffic between the several countries of Europe and their respective provinces. The inland commerce between Germany and Italy has quadrupled within half a dozen years, Italy buying German iron with silk and wine. Communication between England and the Continent is more frequent than between England and Ireland. The Turkish question is a question of Austrian trade, and would soon be settled but for that element of complication. By the adoption of the metrical system a common standard of weights and measures has been established among the leading continental countries, and several of them use, in the French franc and Italian lira, a common currency unit. The Germans are giving up their old printed character, so mischievous to the eyesight, and a few of the Russian letters will soon be the only exceptions to the universal use of the Roman type. These changes are due to the demands of commerce. Diversity of language will yield more slowly, if at all; though that, too, has been attacked. French, long triumphant in diplomacy, is gaining ubiquity in the *salon*, thanks to the increase of travel, "all roads leading to Paris." When excursion-trains get into the habit of disregarding frontiers, and the peasantry and burghers are set in motion, the reign of dialect may be threatened, discouraging, to those who hope for uniformity of speech, as is the contemplation of polyglot Belgium, the meeting-ground of all the armies, all the tourists, and all the tongues. Doubtless, there are mutual adaptations between the genius and the language

of a people which are not without value to others. Each may think best in its own words, and perceive shades and tints of truth which another medium would blur. United Italy, United Germany, Holy Russia, and the "haughty islanders" of Britain must certainly be of that persuasion.

Costume, the physical as language is the mental dress of a nation, is fast yielding to the unifying influences of the day. It is fully illustrated, in its ancient and modern styles, in the Plates attached to this work. Its provincial peculiarities, after a survival in some cases of centuries, are one after another disappearing. The Turk has doffed the turban in favor of the fez. The kilt is fading into the cutaway, and will soon be as much of a rarity in Athens as in Edinburgh. The Spaniard retains only the sash, his mutton-pie hat being quite a new fashion. "Europe ends at the Pyrenees," and beyond them, if anywhere, one would look for the survival of ancient dress. The French, German, and Dutch peasant-women retain certain eccentricities of linen in the way of head-gear, but there is no telling when that white flag may be struck. Climate will of course be somewhat exacting in this matter. The Laplander—or his supplanter, for he is said to be dwindling in numbers—will make the reindeer his draper, and the moujik will be long in finding a winter substitute for sheep-skin. The American Chinaman, with a facility of adaptation that speaks well for his nation's capacity for progress, has dropped all of his native array save the pigtail, and that he keeps closely under cover. An unfortunate thing is, that the fashions of the day are set by the denizens of a latitude wherein cold rather than heat is to be guarded against. The prevalent costume is therefore not only too heavy for warmer climates, but too heavy for a temperate region. We are overclad. Other portions of the body as well as the face should be inured to the air. The Highlander never complained of his cold knees: he did not shiver till he was ordered into trews.

Simple, and, generally speaking, convenient, as the dress of our day is, the fabrics of which it is composed are in greater variety than at any former time, and draw more largely upon activity and ingenuity in manufacture. Linen and wool were formerly the two main materials for ordinary use, and neither of them admitted, upon the wheel and the handloom, of any great complexity of structure. The introduction of cotton and its combination with these and with silk have brought into being a list longer than any one but an expert could name of webs infinite in variety of pattern and texture. The supply of textile products for clothing and other purposes is a leading feature of the manufacturing movement of the period. The power-loom and spinning-jenny came in, so far as Europe's acquaintance with the fibre is concerned, with cotton and with the era proper of machinery. The steam-engine, too, was just at hand to supply the motive-power for the inanimate spinsters and websters. The hands of man and the strength of all his water-mills and wind-mills were at once endued with thousand-fold effectiveness. The engines of Watt, dating, like Napoleon, Ney, Wellington, Humboldt, and Mehemet Ali, from 1769, built themselves with smelted iron and fed themselves with coal from sub-

terranean veins. They then went to work at the spindle and the loom, adding to their first a thousand other fields of labor, and gathering to their iron grasp every form of mechanical effort, until the cylinder of the Glasgow clockmaker may be—and, in fact, among the heraldically-inclined frequently is—employed as the emblem of the age. Heat, say physicists, is a mode of motion. Through the steam-engine it is retranslated into motion from the buried sunlight of geologic time.

It is more difficult to say what the steam-engine has not done in the work of progress than what it has. We commonly say that it lacks the intelligent touch of the human hand. It will never design, model, or compose. It does not think. Yet, though it has not hand, eye, and brain, it holds, stored in its infinity of wheels and shafts, a library of thought that constantly increases in bulk, variety, and usefulness. It embodies in experiment, reflection, and comparison the work of hundreds of humble but patient and genuine thinkers—men who have, often with more of lofty purpose than usually actuates sovereigns and statesmen, lightened the burdens and increased the happiness of their kind. Systematized industry, on the scale now witnessed, calls into action a higher grade of faculties and more thorough training than sufficed for the handicrafts of old. Many establishments in America, England, France, and Germany are little empires in themselves, requiring much administrative and financial talent in addition to technical knowledge. As to the workmen, the effect of machinery in blunting the faculties, by confining them to a single simple operation endlessly repeated, has been overrated. There is no reason to suppose that any class of artisans is inferior in intelligence to the same class in the days when everything was hand-work. And the higher classes are incontestably superior, while the rewards of successful invention stand temptingly before all of them. Employers have an interest in encouraging ambition in that direction. The skilled operative is now measurably protected against what he formerly felt as a great injustice—the over-employment of apprentices. The power of combining with his fellows for effectual protest against this and other measures deemed prejudicial to his interests is far more at his command than formerly; and he has recently been showing very clearly his appreciation of the fact. The tendency to concentration of modern industries and the growth of large cities assemble labor in greater masses and endow it with improved facilities of union and consultation. The march of education joins in promoting its ability to act in behalf of its own interests; and a secondary yet important result of the training in debate and organization thus acquired by the artisans is their enhanced value and efficiency as citizens. The excesses which we have seen are unfortunate incidents in the process of self-discipline. Socialism and Communism need not here be taken into account. When they flame into violence they will meet the ordinary treatment of crime. Society must live, and anarchy is death.

Our cities, populous beyond all former example, often present deplorable scenes of poverty, discomfort, and suffering among what are loosely

termed the laboring classes. But these evils do not exist in a degree comparable to that which obtained in the towns of even a century ago. A city of to-day is in all sanitary appliances a very different thing from its predecessor. Light, fuel, food, air, water are all in better supply. It is difficult, without close investigation, to realize the gain that has been made in this regard; and the gain enures chiefly to the masses. Those who had wealth could always command luxuries; those who have not are the beneficiaries of modern improvements. Reference is not here made to benevolent institutions, which exist on a larger scale than ever before, without being, so much as they once were, incentives to pauperism, but only to the provision of a more liberal and healthful way of living among the poorer classes. These have wider choice of means for physical and mental development.

Crime, the old trouble, is still with us. The whitening of the criminal record does not progress as could be desired or even justly expected. The prisons remain well filled. The results so glowingly anticipated from the penitentiary system are not yet discernible. Improvement there has been, but the State prisons of the United States contain one convict for each thirty-five hundred of the population. For much of this state of things the condition of the law and its administration is answerable. In a country where written constitutions and statutes are the basis of everything, law should approach perfection and act almost automatically. Certainty should be a leading attribute of justice, as it is far from being in this country. Improvement has been more marked, probably, in Europe, where there was more room for and need of it. The English criminal code, which became in the course of the eighteenth and the beginning of the nineteenth century nearly as savage as that of Draco, has undergone tolerably thorough reformation. The shooting of a hare or the stealing of a hat is no longer death, and the criminal is allowed the full defence of counsel. On the Continent the prisons are no longer crowded with political prisoners, and an editor who has not been in jail has ceased to be a phenomenon. But all this is due less to the progress of law as a science or a useful art than to the action of the people, whom growing enlightenment, activity, and self-respect have encouraged to exact their political rights.

Power implies responsibility. The rigid administration of justice is part of this responsibility. Let us have none but good laws, and a strict execution of them. Homicide sometimes has the air of an epidemic in the United States, thanks in great part to the non-enforcement of the laws against carrying secreted weapons. Chicane, an exhaustless armory of conflicting precedents and decisions, stupid or corrupt juries, too ready power of appeal, and other sources of legal wrong, are quite within the reach of reform, and their continued domination is an anachronism.

Population and wealth have, in their rapid increase, added at once to the temptations and the opportunities of the evil-disposed. Of course, some unwholesome fruits of so extraordinary a movement were to be looked for in the great mass of better ones. Here in America, for one

item, is a nation of sixty millions, the product of a single century, all to be organized, clothed, fed, educated, and policed. They are composed of many different races, speaking different mother tongues, and reared under every conceivable circumstance of climate and polity. The new people has not only created itself a civilized home out of the wilderness, but has exerted a powerful reflex influence upon the Old World, contributing to it inventions abstract and material and awakening its energies as they were never stirred before. It has in turn borrowed what Europe could contribute to the common stock of knowledge and progress. A great deal she has contributed, too. The deepest thinkers are apt to be found in the older and more settled communities: investigation craves a certain degree of repose. Thus, in science, literature, and even in mechanical contrivance to a great extent, Europe has remained in the lead. The lights of discovery have beamed first upon her soil. Davy, Berzelius, Arago, Dalton, Faraday, Darwin, Daguerre, and a long list of almost equal note belong to her. We may claim Fulton, Whitney, Morse, Bell, and Edison, besides Franklin, who dates with the opening of our century.

The task of applying steam to locomotion, the central one of the period, was divided between the two great Anglo-Saxon states. England placed steam upon the rail after America had set it afloat. The steamer and the locomotive have gone, we had almost said, everywhere. The latter, however, has yet new worlds of wilderness to conquer. Practically, it has borne the sea inland, and created navigable creeks and rich harbors in the heart of continents. The telegraph follows its path, and goes beyond it into the desert which it will yet traverse and under the sea where it cannot go. Napoleon's boast that the Alps had ceased to exist has been made good by the railway, and it will ere long obliterate Sicily and England as islands.

The railway, the ocean-steamer, the electric light, telegraph, and motor, photography, chloroform, and minor discoveries attendant or dependent, date within the memory of men not well past middle age. Divided into periods of comparative facility of intercourse and unification of interest, the world's whole history centres less than fifty years ago. Who shall predict the events of another half century?

All these triumphs are triumphs of peace. War is incompatible with them. They have created a sort of "Federation of the World," though the "Parliament of Man" be not yet called to order. His rulers, in fact, are a little afraid of their new tools of destruction. Torpedoes, iron-clads, hundred-ton guns, and dynamite shells are fearsome playthings. Nobody can say how any of them will turn out when tested against each other. Sea-fights may eventuate like the combats of the condottieri in mediæval Italy, where the antagonists were prostrated in their impenetrable armor and neither could rise again.

But the preacher and the schoolmaster are both abroad. If men learn to think, they will think right; and to think right is to be just, and to be just is to be good. The choice of guides, for present and future, was never freer or wider. What more can be said?



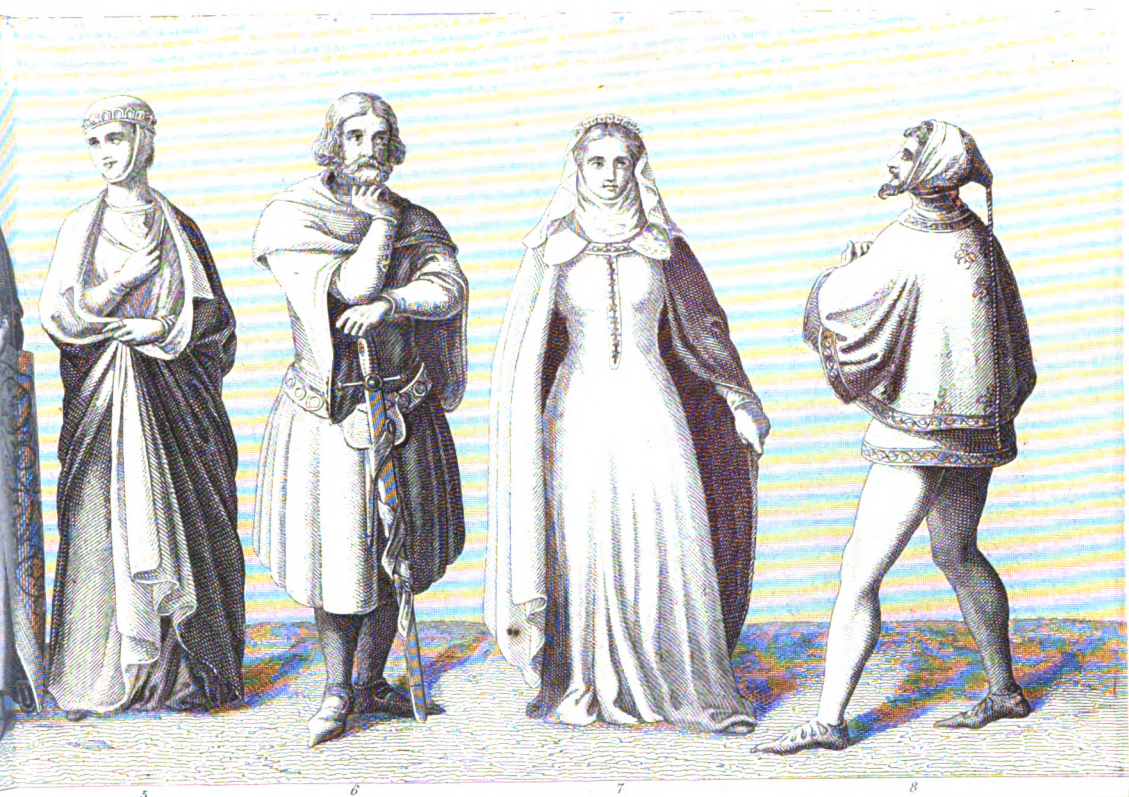
1. Emperor Justinian. 2. Court officials. 3. Guards. 4. Empress Theodora. 5. Ladies-in-waiting. 6, 7. Old-Slavonic duke of the Lombards, and his suite. 12. Frank. 13. Scythians.



ic noblewomen. 8. Early Russian costume. 9. Prehistoric attire of Western Europe. 10. Dacian costume. 11. Arechis,



1. Emperor St. Henry II. 2. Emperor Frederic I. 3. Queen Berengaria of England. 4. Costume of the thirteenth c.
1340 (from the monument of Count Ludwig von Hohenlohe). 7. Costume of the year 1340. 8. Italian costume of the four
11. Bell costume (about 1400). 12. Scalloped costume (about 1430). 13. Philip the Good of Burgundy (France). 14. La



th century. 5. Costume of the thirteenth century (from a sculpture in the Cathedral of Naumburg). 6. Costume of the year
fourteenth century. 9. Duchess Catherine, wife of Duke Rudolph IV. of Austria. 10. Costume of the nobility (about 1380).
sely, court of Charles the Bold. 15. Costume of a German burgher (about 1470).



1. Academic costume (about 1500). 2. Student in gala attire (about 1500). 3. Young couple at a patrician ball (about 1510). 4. Student in gala attire (about 1560). 7, 8. German city-people (about 1570). 9. Costume of a Spanish gentleman (about 1580). 10. French of the sixteenth century.



1510). 4. Couple from a bridal train (about 1530). 5. "Crown bride" and escort (about 1550). 6. Lansquenet, with trunk-
 French lady (about 1590). 11. Italian lady (about 1590). 12. Hungarians; 13. Turk; 14. Russian,—all of the second half



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1. Dutch hoop-skirt costume (about 1610). 2. Dutch male costume (about 1610). 3. French fashions (about 1640).
 4. Senator of Nuremberg, Germany (about 1700). 5. Citizen's attire (about 1740). 6. Gala costume of the Court of Berlin (about 1800).



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4. Louis XIV. and his Queen (about 1670). 5. Dandy (about 1690). 6. Belle with the "fontage" cap (1690). 7. (about 1780). 10. French costume at the time of the Revolution. 11. Court attire (about 1800). 12. Costume à la Grecque



1, 2. Neck, head, and hair fashions (about 1500). 3. Linen hood of the married women (about 1510). 4. Neck frill England (about 1600). 9, 10. Collar and hair fashions (about 1620). 11. Collar and hat about the time of the Thirty Years' (about 1670). 15. Spangled cap of a matron of Nuremberg (Germany). 16. Neckerchief and wig (about 1670). 17. Neck 1700). 20. Wig and costume (about 1720). 21. Wig and costume (about 1750). 22. Hair gathered into a bag, French fashion



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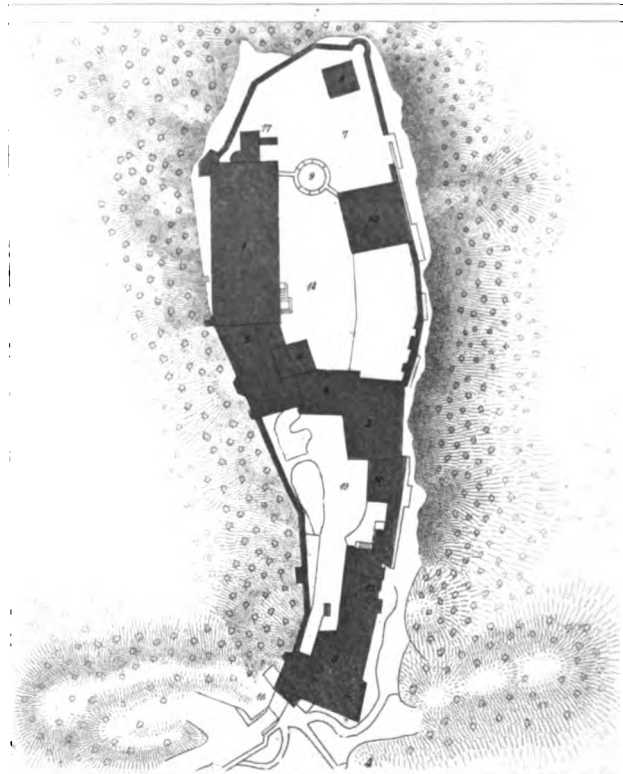
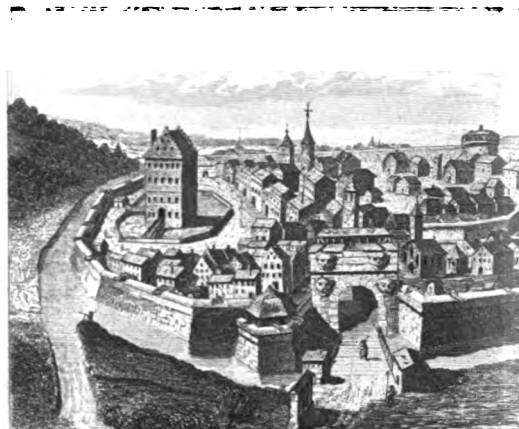
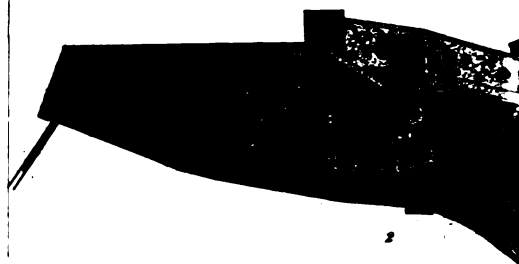
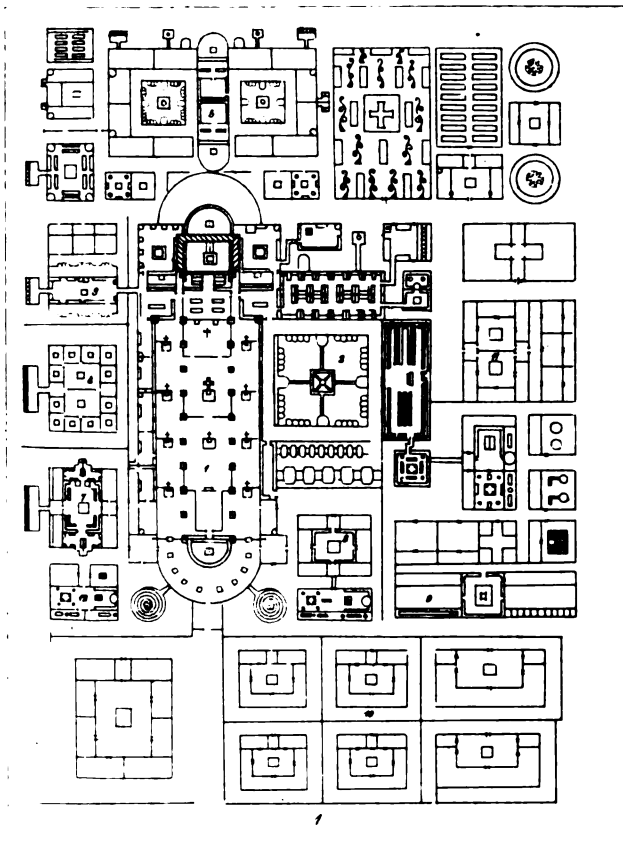


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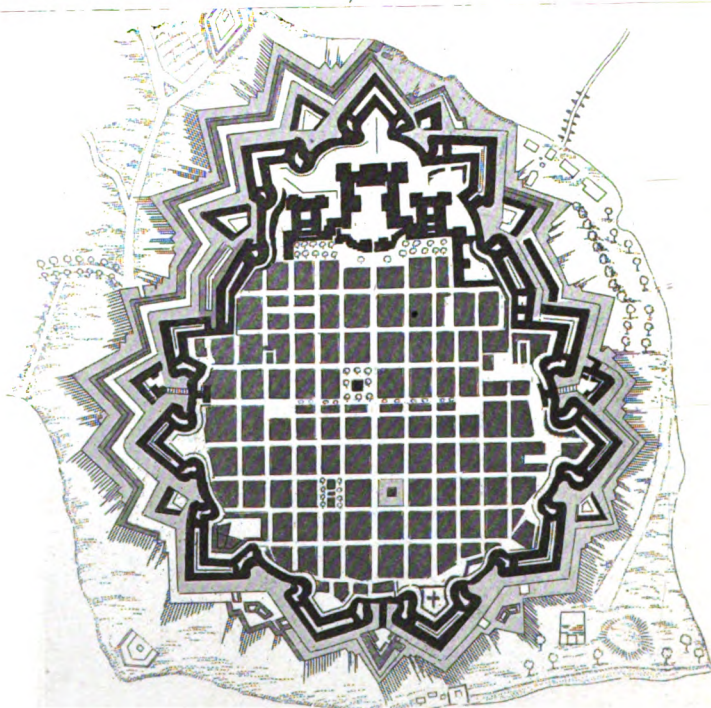
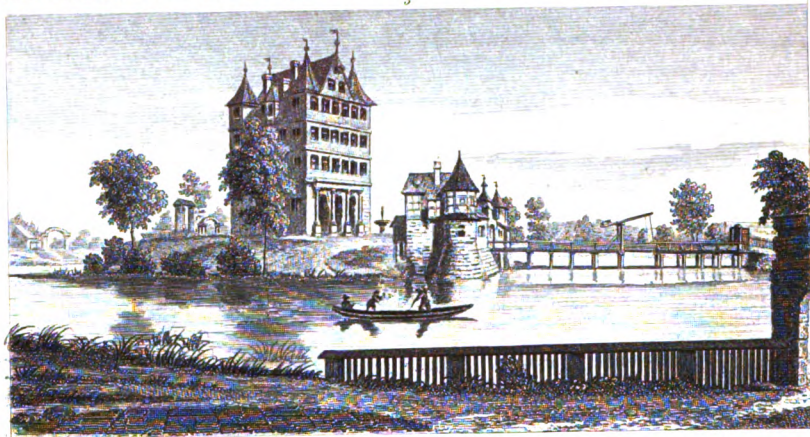
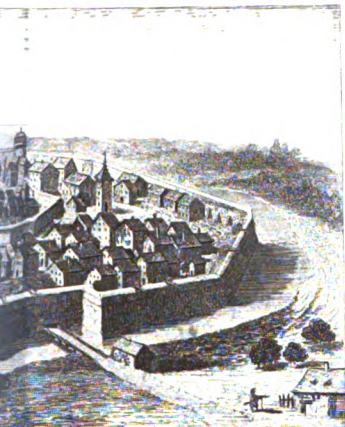
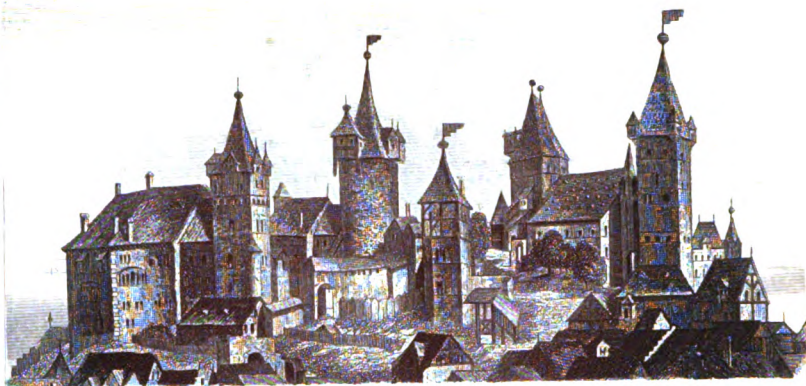
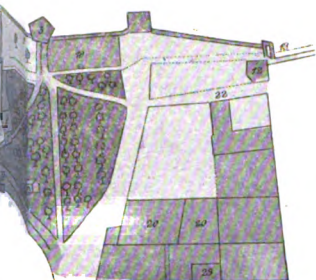


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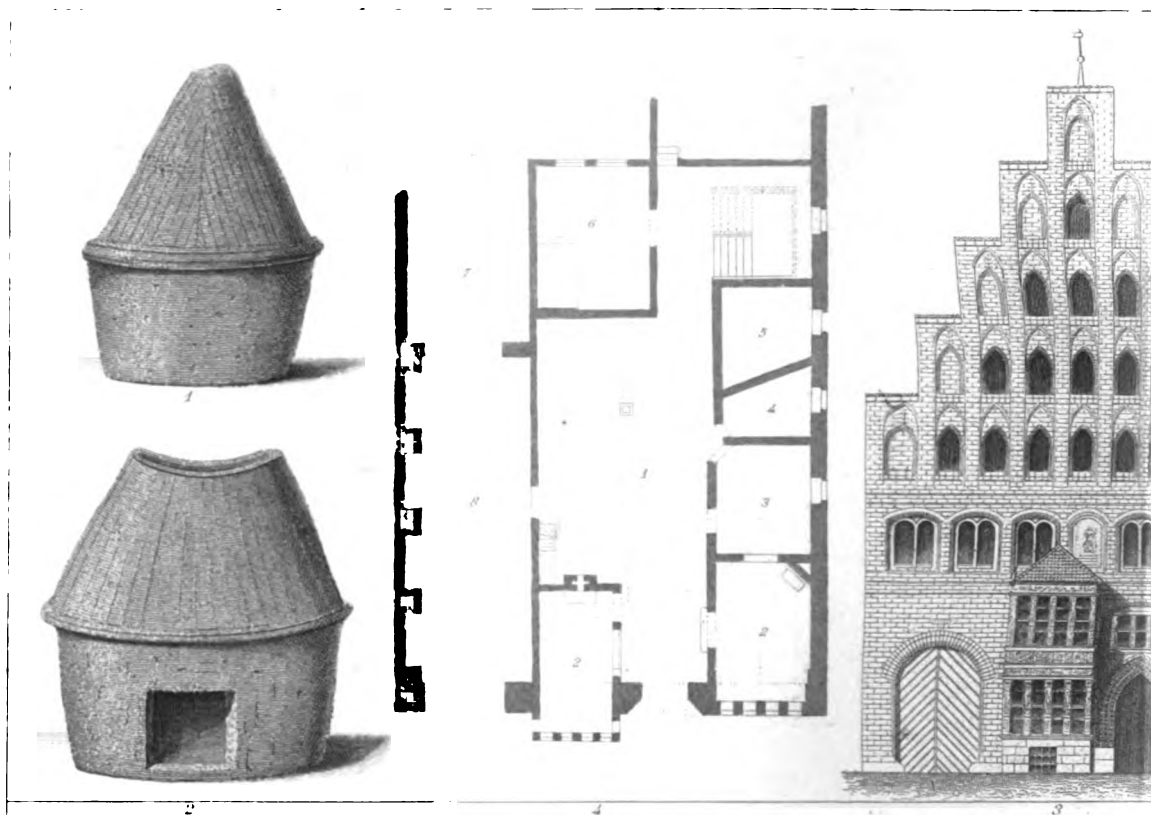
1. Ground-plan of the monastery of St. Gall, Switzerland (9th century). 2. Ground-plan, and 3, elevation, of the castle of Gleishammer, near Nuremberg. 6. City of Forchheim (1632). 7. Place of refuge, castle of Gleishammer, near Nuremberg. 8. Plan of old city of Nuremberg.



1. Plan of Nuremberg (15th century).
2. Plan of Mannheim (1767).

4. Original plan of the castle of Wartburg (Thuringian Forest, Germany).

5. Plan of the



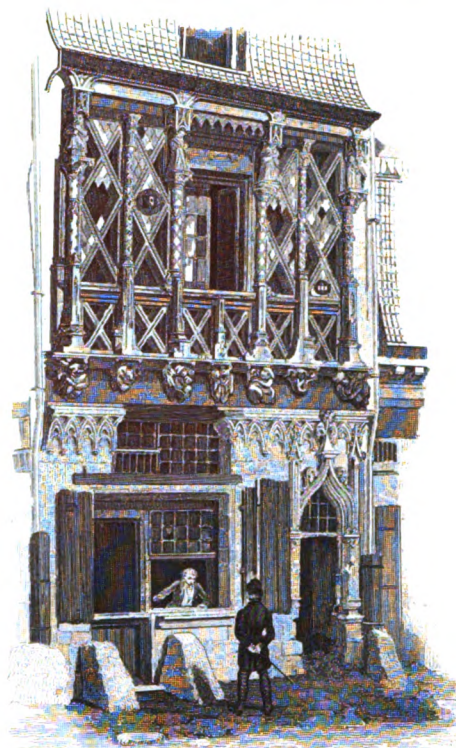
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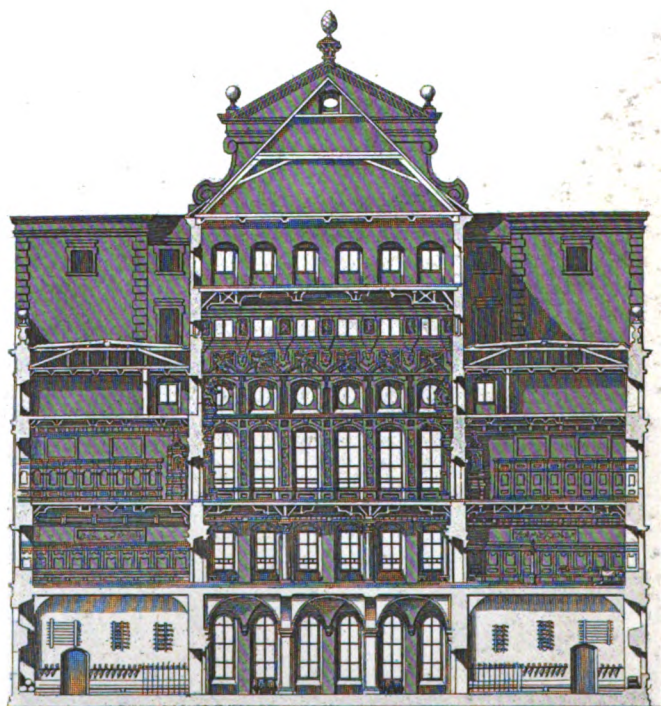
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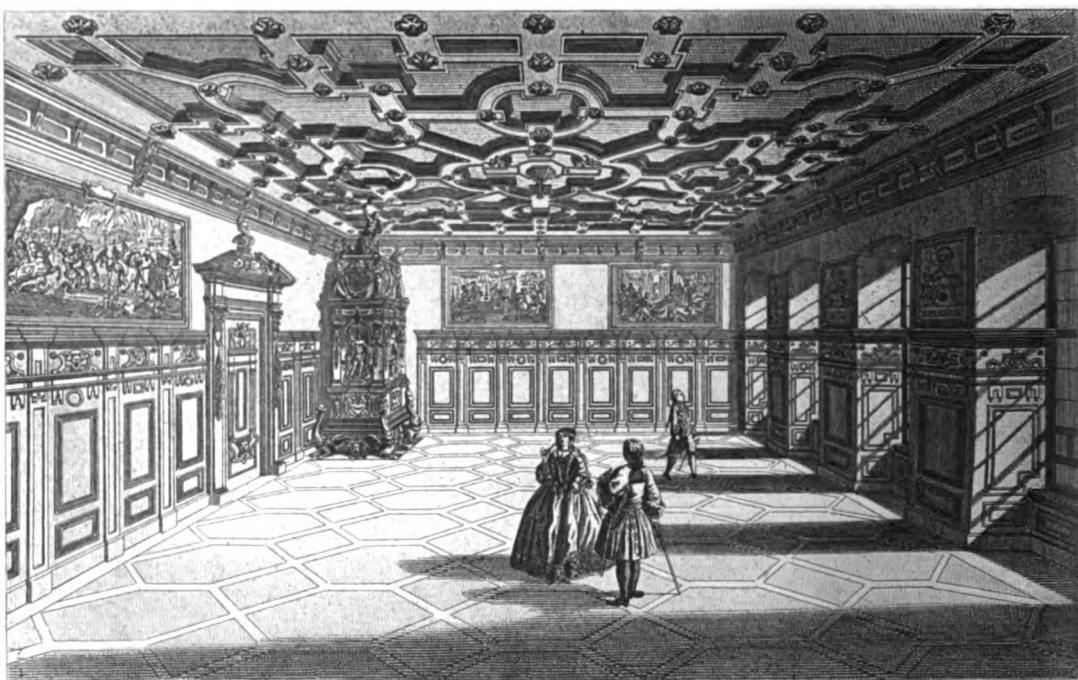
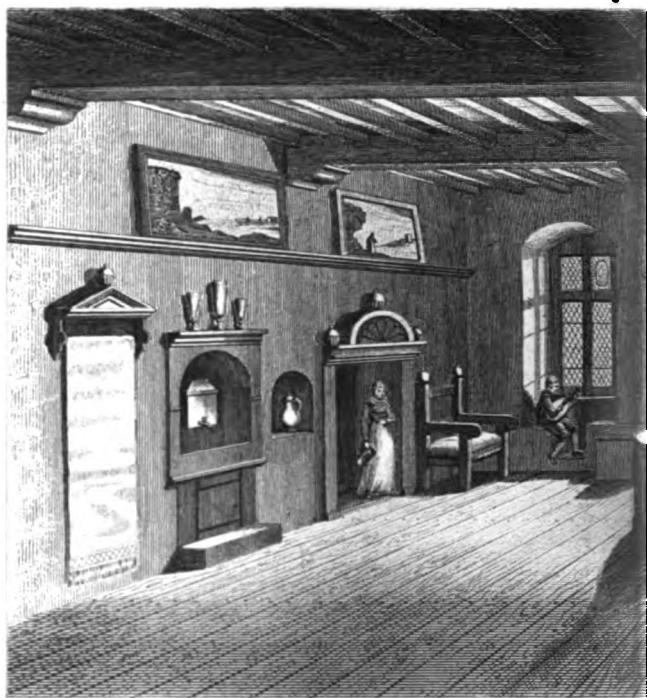


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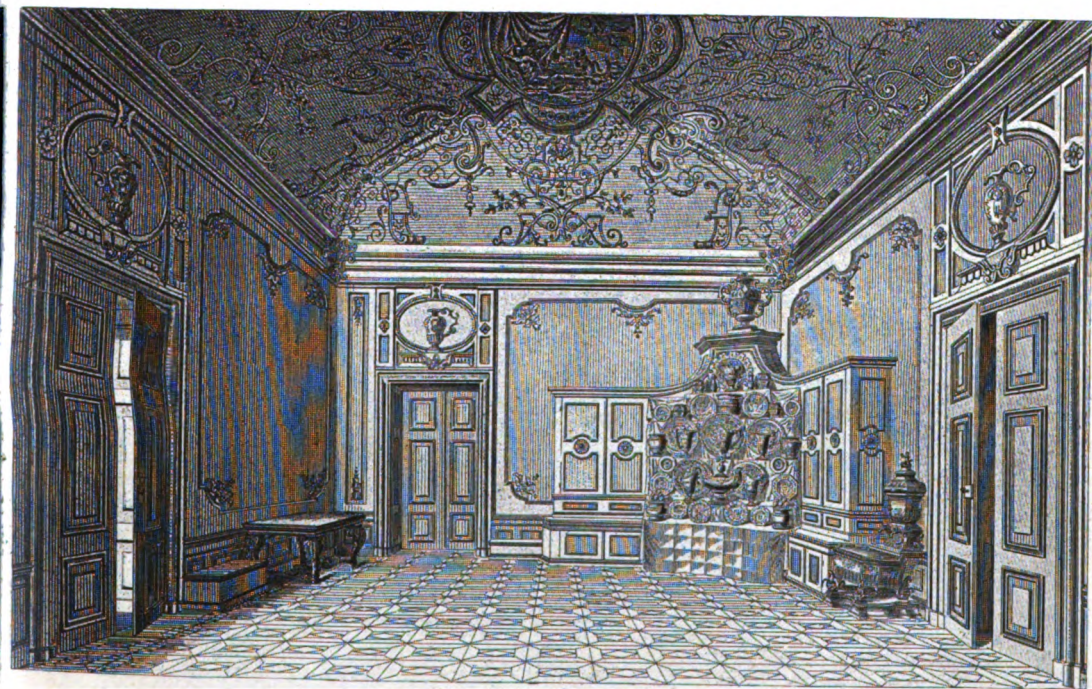
Ground-plan of mediæval dwelling at Goslar. 6. Ground-plan of the Palazzo Grassi, in Venice. 7. Dwelling at Le Mans, Augsburg. 10. Cross-section of the Senate-house at Augsburg.



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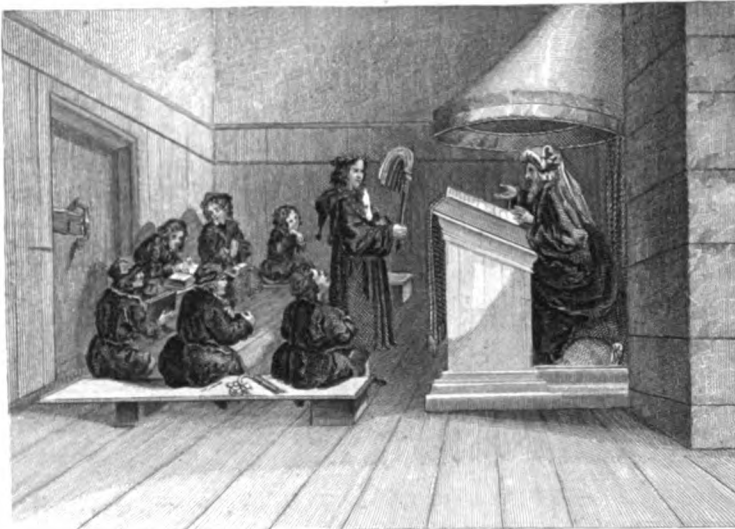
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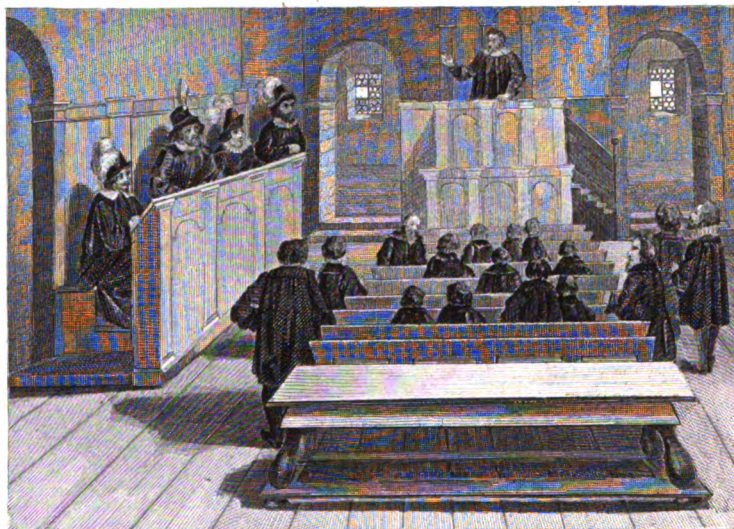


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1-4. Trades of the 16th century: 1. Pewterer; 2. Brazier; 3. Silk embroiderer; 4. Bathing and cupping establishment, city of Tübingen (17th century). 9. Store; 10. Merchant's office—16th century. 11. Bear-hunt (1600).



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1. Departing knight receiving his helmet from his lady (A. D. 1300). 2. Italian social entertainment (1340). 3. Sovereign and his court (1530). 6. Ball-room scene (1640). 7. Family devotions (1780). 8. Evening social gathering (1810).



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at his repast, surrounded by his courtiers and counsellors (1480). 4. Brigandage and vagrancy (1530). 5. Carnival banquet



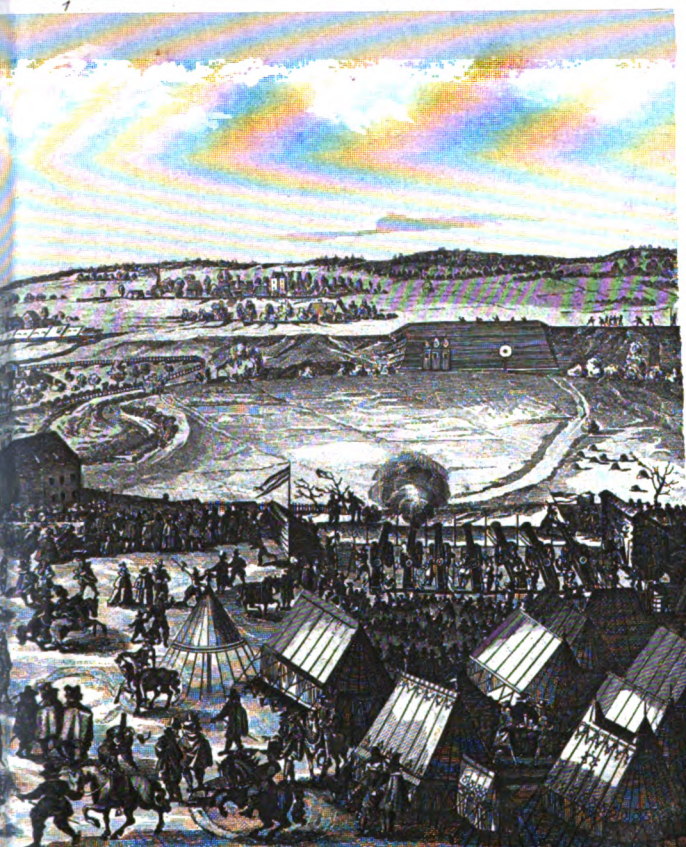
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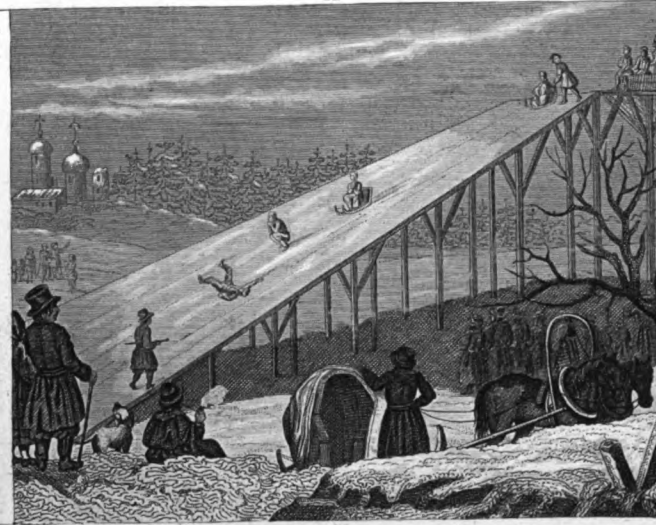
1. Festival at the consecration of a village church. 2. Masquerade costume (Nuremberg, 16th century)



3. Shooting festival (Schützenfest) at Nuremberg (1614). 4. Professional banquet-orator (1674).



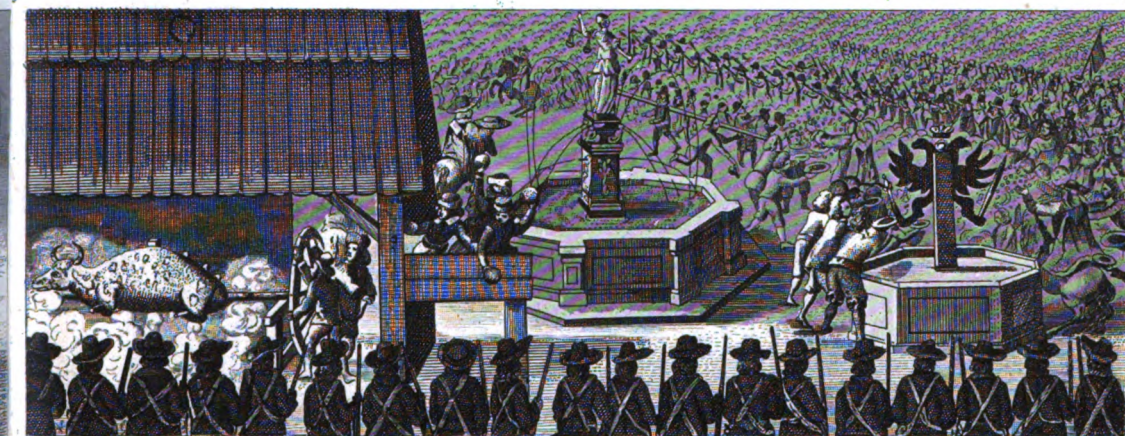
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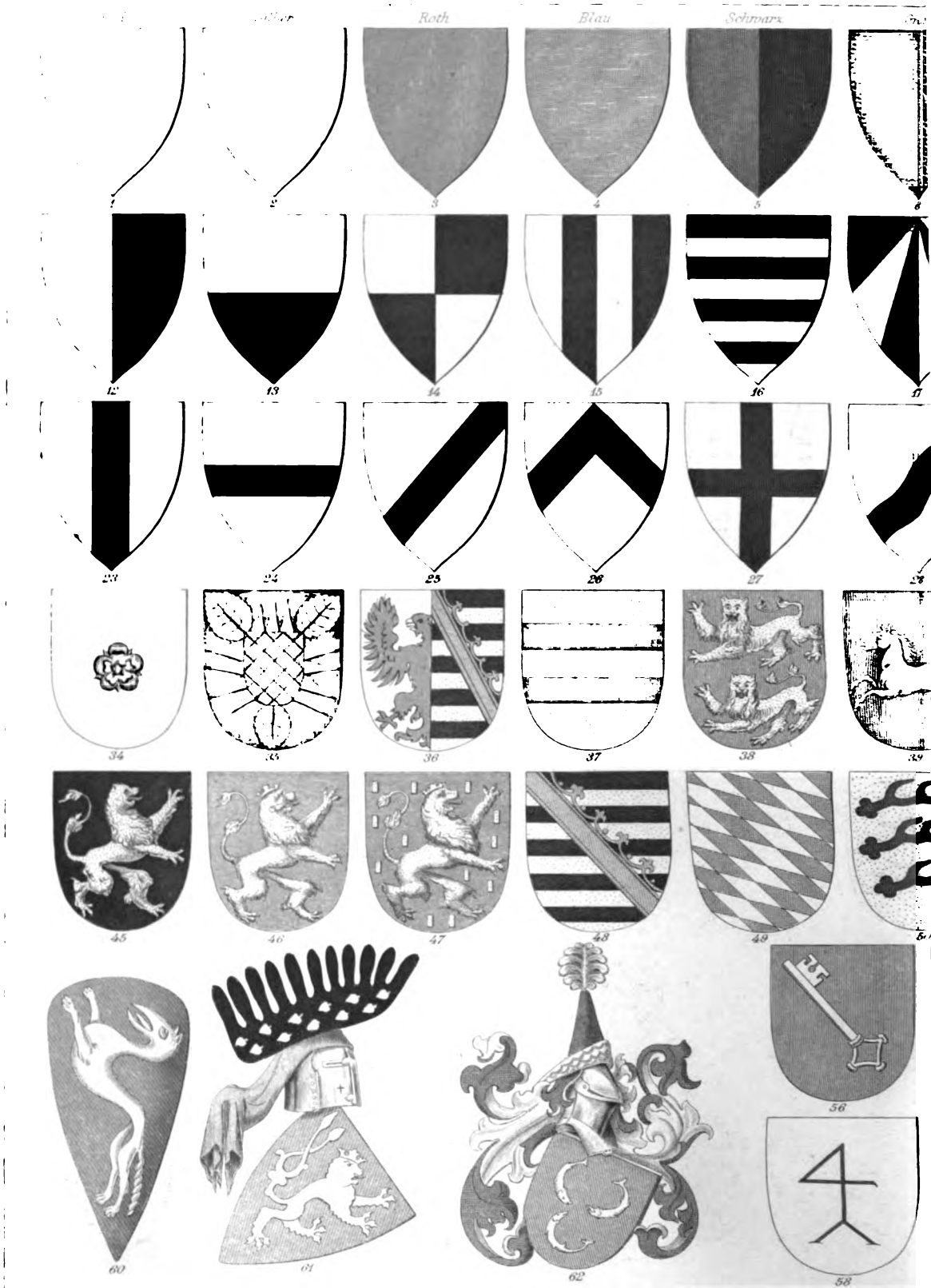
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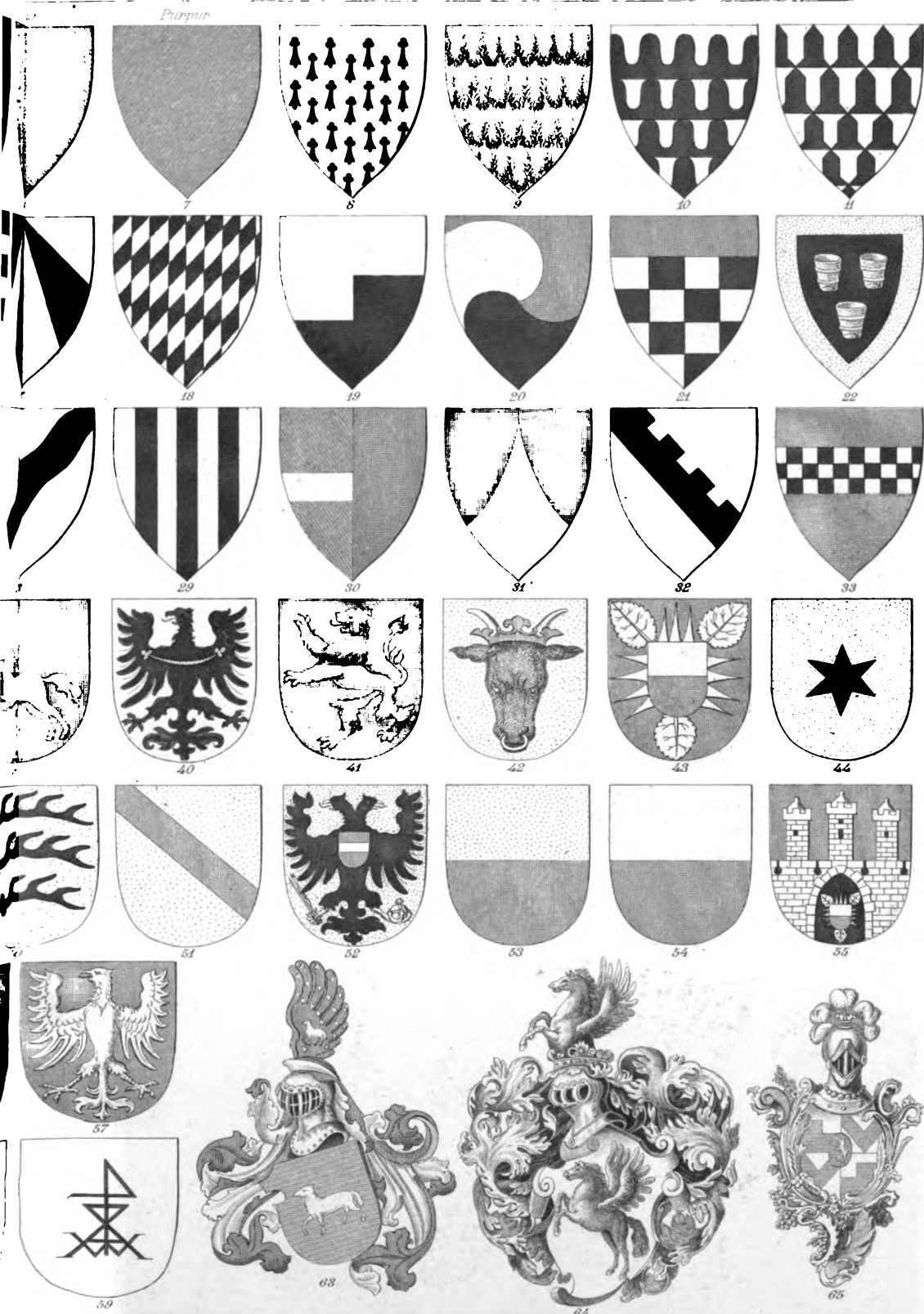
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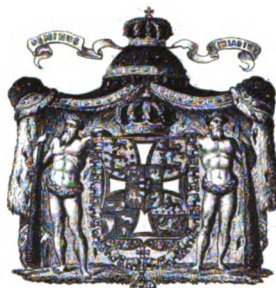
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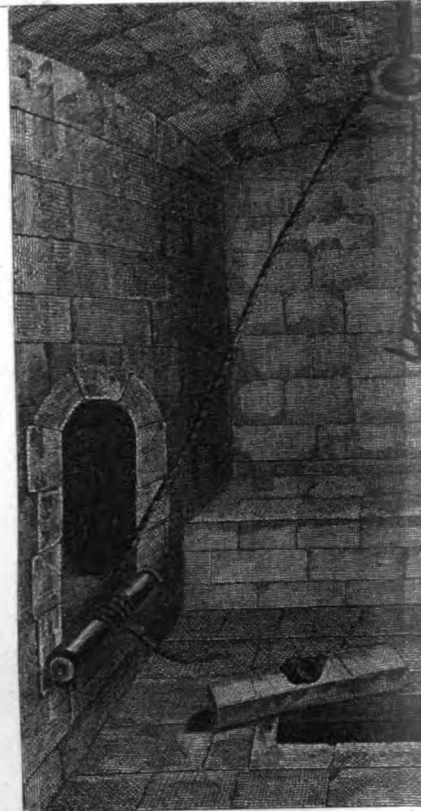
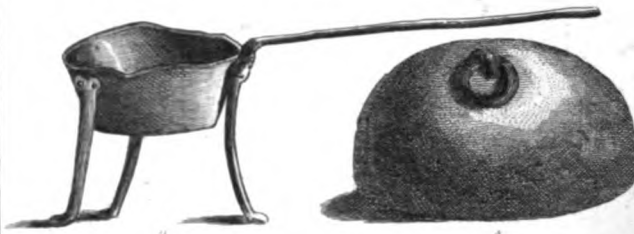
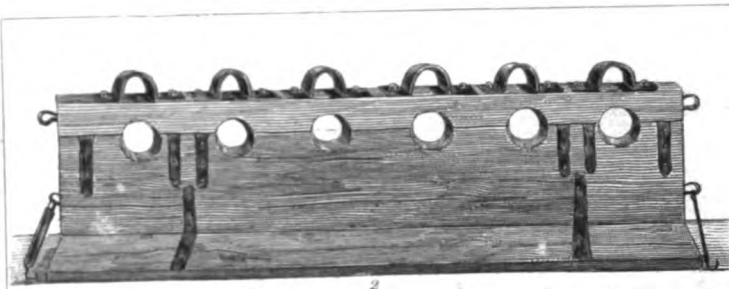
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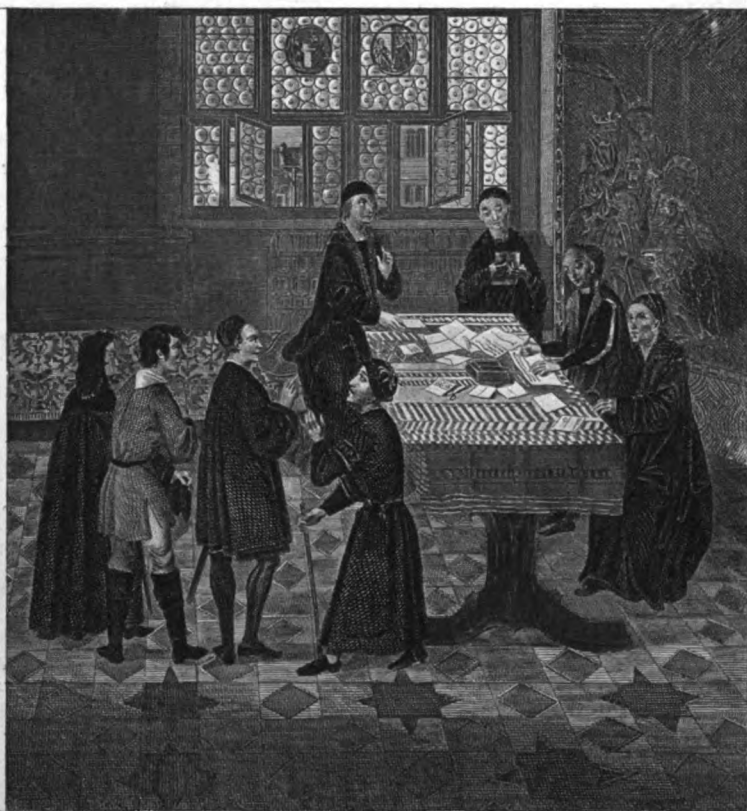
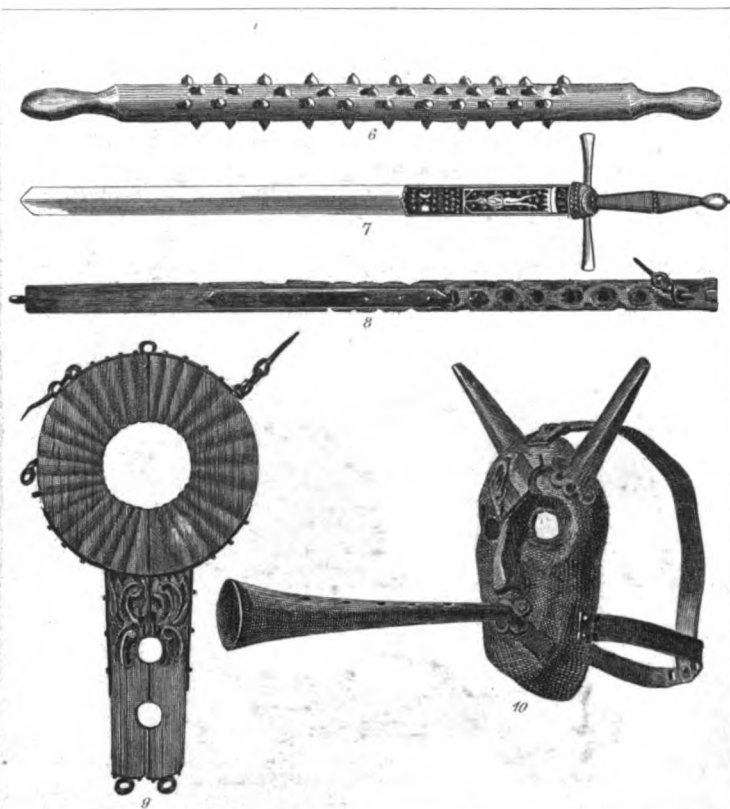
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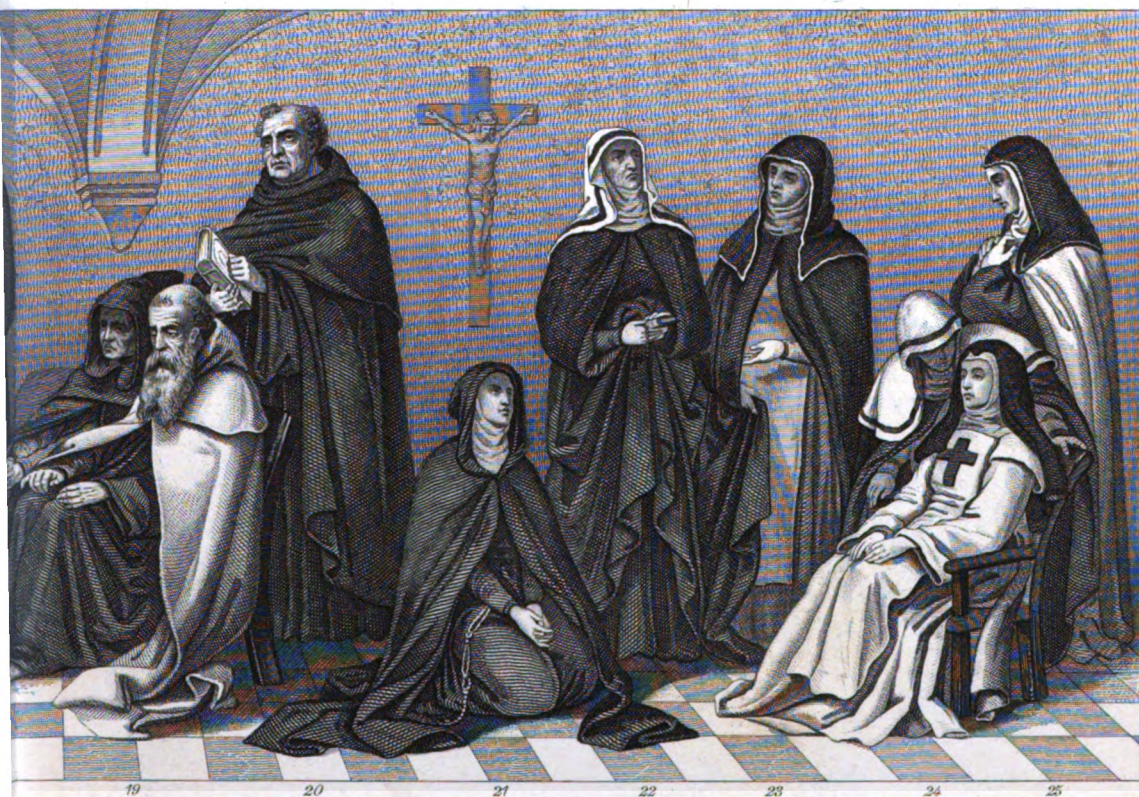
1. Torture-chamber. 2. Stocks. 3. Pitch-pan. 4. Rack-weight. 5. Ankle-irons. 6. Spiked roller. 7. Executioner's attachment. 11. Penal inquisition (16th century). 12. Judgment chamber (15th century). 13. Execution of Bohemian nobles.



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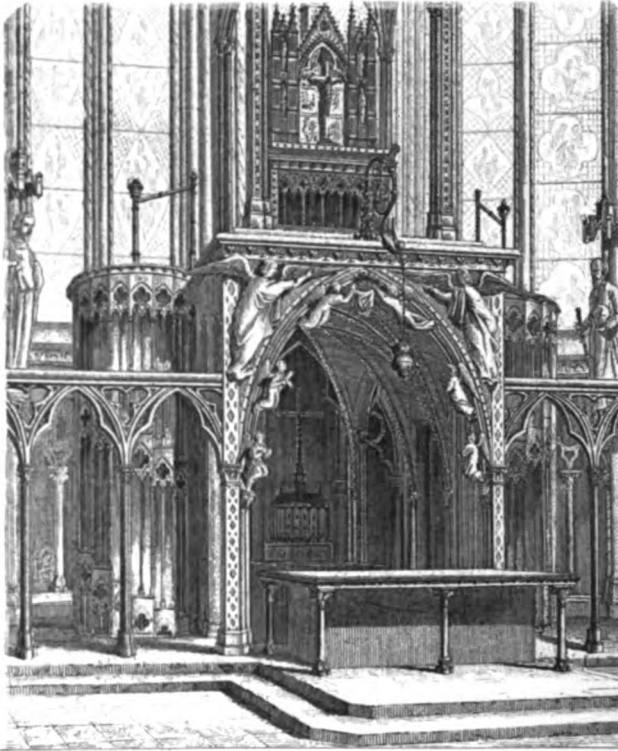
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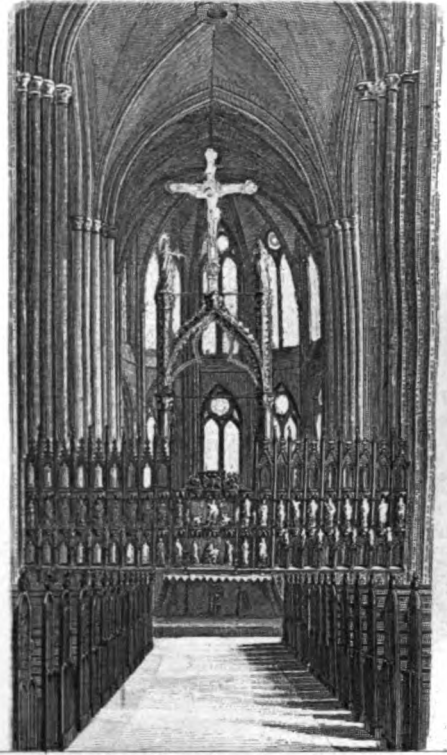
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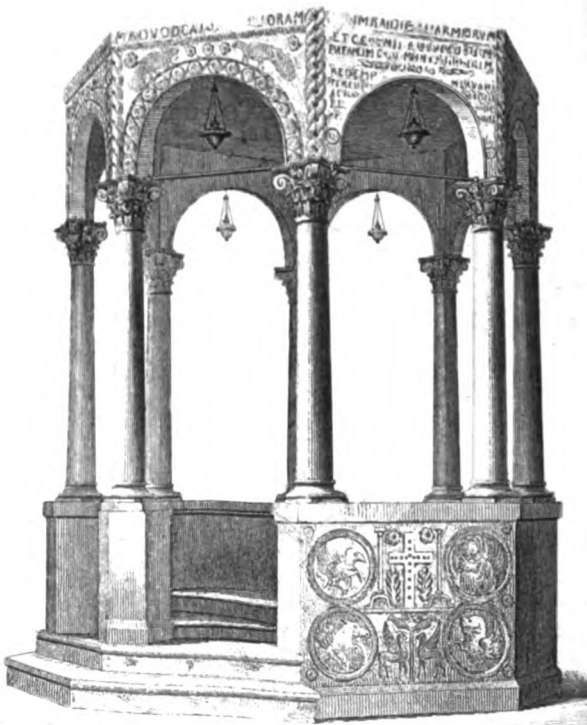
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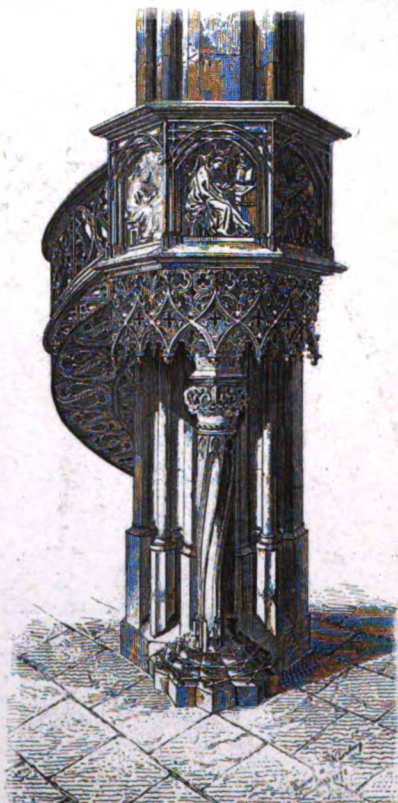
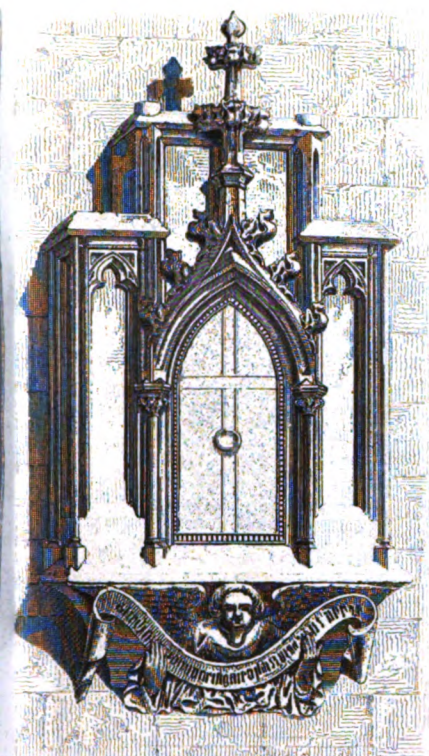


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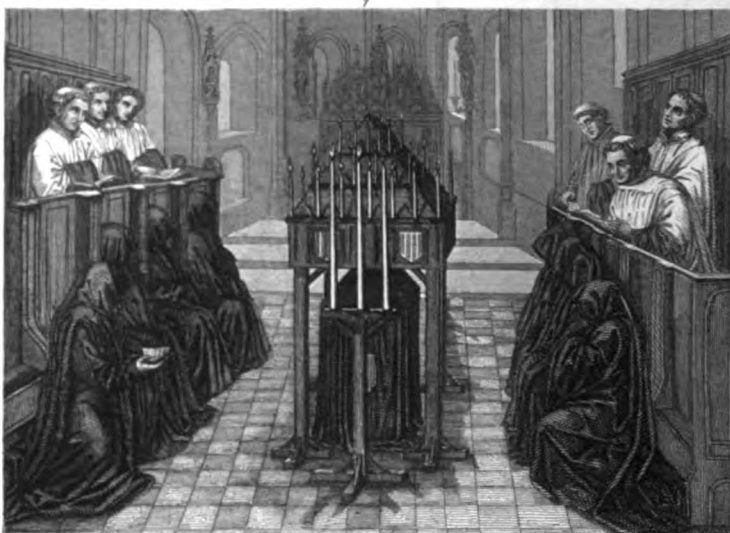
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any). 8. Pulpit of the Cathedral at Stuttgart.



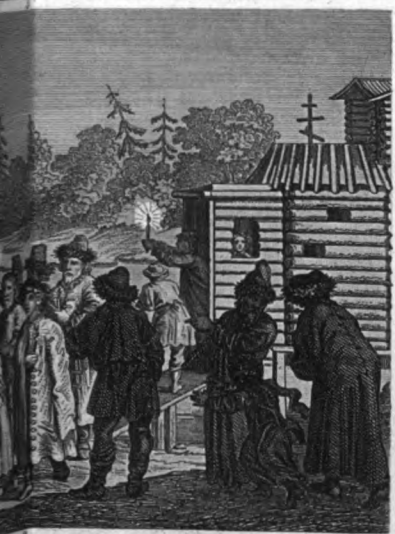
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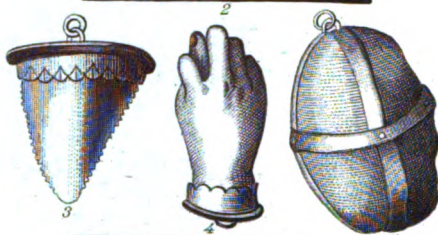
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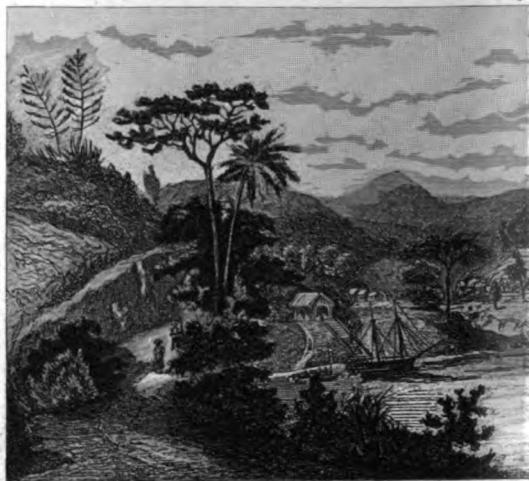
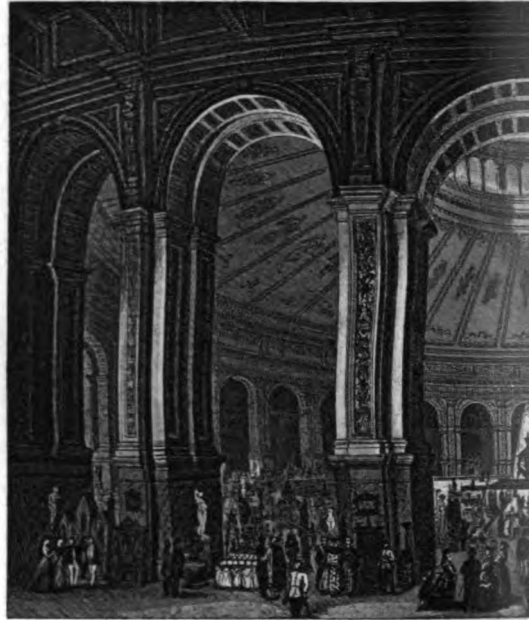
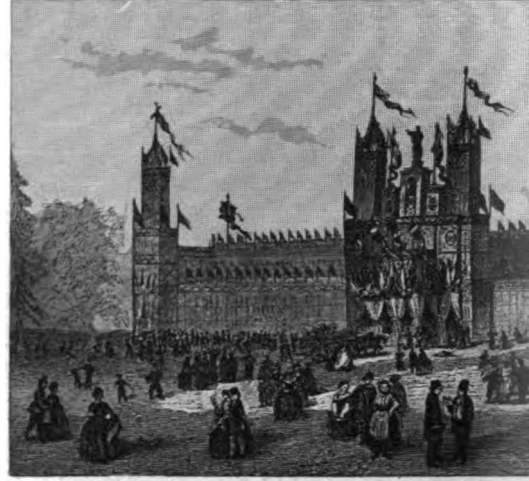
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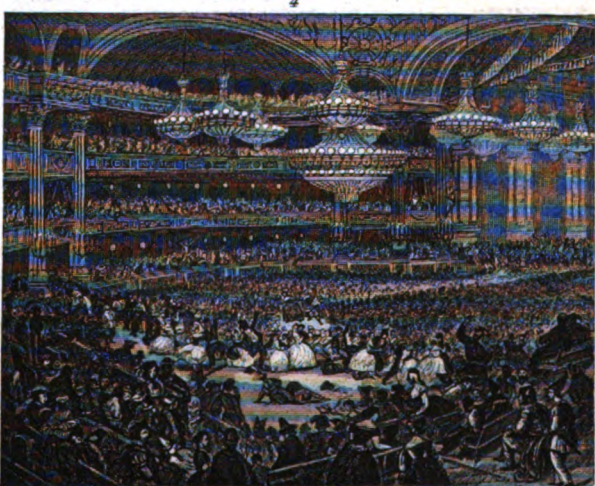
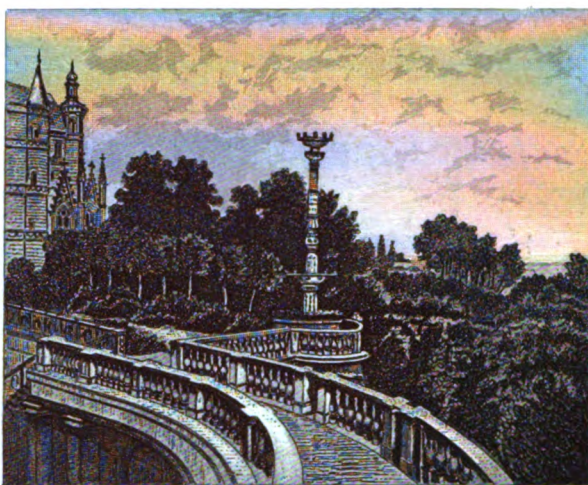
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